Drinking Water Surveillance Program

BELLEVILLE WATER TREATMENT PLANT

Annual Report 1989

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BELLEVILLE
WATER TREATMENT PLANT

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1989

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EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

BELLEVILLE WATER TREATMENT PLANT
1989 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, there were 65 supplies being monitored.

The Belleville Water Treatment Plant is a conventional treatment plant that treats water from the Bay of Quinte. The treatment process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. This plant has a design capacity of 54 x 1000 m^3/day and serves a population of 37,000.

Water samples from the raw, treated and two distribution system sites were taken on a monthly basis. The Belleville Water Treatment Plant was sampled for approximately 180 parameters. Parameters were divided into the following groups Bacteriological, Inorganic and Physical(Laboratory Chemistry, Field Chemistry and Metals) and Organics (Chloroaromatics, Chlorophenols, Pesticides and PCB, Phenolics, Polynuclear Aromatic Hydrocarbons, Specific Pesticides and Volatiles). Specific Pesticides and Chlorophenols were analysed for in June and November only.

A summary of results is shown in Table A.

Inorganic and Physical parameters (Laboratory Chemistry, Field Chemistry and Metals) were below any applicable health related ODWOs.

Of approximately 110 Organic parameters tested for on a monthly basis, none exceeded health related guidelines.

During 1989 the DWSP sampling results indicated that the Belleville Water Treatment Plant produced good quality water at the plant and this quality was maintained in the distribution system.

TABLE A

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP

SUMMARY TABLE BY SCAN

	SCAN	RAW TESTS	RAW POSITIVE	RAW %POSITIVE	TREATED TESTS	TREATED POSITIVE	TREATED %POSITIVE	SITE 1 TESTS	SITE 1 POSITIVE	SITE 1 %POSITIVE	SITE 2 TESTS	SITE 2 POSITIVE	SITE 2 %POSITIVE
	BACTERIOLOGICAL	36	28	77	36	5	13	35	15	42	33	4	12
	CHEMISTRY (FLD)	36	36	100	72	72	100	112	95	84	115	102	88
	CHEMISTRY (LAB)	252	222	88	243	183	75	430	384	89	411	356	86
	METALS	288	156	54	288	136	47	564	333	59	564	308	54
	CHLOROAROMATICS	168	0	0	154	0	0	168	0	0	154	0	0
	CHLOROPHENOLS	12	0	0	12	0	0	.	.	.	.	.	.
	PAH	188	0	0	188	0	0	0	0	0	0	0	0
	PESTICIDES & PCB	408	0	0	387	0	0	343	0	0	322	0	0
	PHENOLICS	12	11	91	12	11	91	0	0	0	0	0	0
	SPECIFIC PESTICIDES	66	0	0	65	0	0	12	0	0	11	0	0
	VOLATILES	348	2	0	348	36	10	348	36	10	348	36	10
TOTAL		1814	455		1805	443		2012	863		1958	806	

NO KNOWN HEALTH RELATED GUIDELINES WERE EXCEEDED

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
A '.' INDICATES THAT NO SAMPLE WAS TAKEN

DRINKING WATER SURVEILLANCE PROGRAM

BELLEVILLE WATER TREATMENT PLANT
1989 ANNUAL REPORT

INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, there were 65 supplies being monitored.

The DWSP was initiated at the Belleville Water Treatment Plant in the spring of 1987. Annual Reports were published for 1987 and 1988 (ISSN 0840-5123).

This report contains information and results for 1989.

In order to accommodate the increasing number of plants on the DWSP and to facilitate the timely completion of the 1989 annual reports, plants with two or more years of published data will receive an abbreviated annual report. This report maintains the same general format as in previous years but does not include a comprehensive discussion of results. For more detail on the parameters analysed and discussion of results, consult the 1987 and 1988 reports.

PLANT DESCRIPTION

The Belleville Water Treatment Plant is a conventional treatment plant which treats water from the Bay of Quinte. The treatment process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. The plant has a design capacity of 54 x 1000 m^3/day and sample day flows ranging from 22.7 x 1000 m^3/day to 40 x 1000 m^3/day. This plant serves a population of approximately 37,000.

The plant location is shown in Figure 1. Plant process details, in a block schematic, are shown in Figure 2. General plant information is presented in Table 2.

SAMPLING LOCATIONS

Water samples were obtained from four DWSP approved locations.

i) Plant Raw - The water originated from the lowlift discharge prior to chlorination and was sampled through a stainless steel line. The sample tap is located in the plant laboratory.

ii) Plant Treated - The water originatedfrom the clear well after addition of all treatment chemicals and was sampled through a stainless steel line. The sample tap is located in the plant laboratory.

iii) Distribution System - Site 1 - This house is approximately 4.8 kilometers from the plant. Water was sampled through copper plumbing from the upstairs bathroom tap.

iv) Distribution System - Site 2 - This house is approximately 3.4 kilometers from the plant. Water was sampled through copper plumbing from the upstairs bathroom tap.

SAMPLING AND ANALYSIS

Plant operating personnel perform analyses on parameters for process control (Table 1).

Water at the Belleville Water Treatment Plant was sampled for approximately 180 parameters monthly in 1989. The Specific Pesticides and Chlorophenols scans were sampled for in June and November only. Polynuclear Aromatic Hydrocarbons and Phenolics are only analysed for in the raw and treated water at the plant. As of August the triazine pesticides were only analyzed in the raw and treated water. Laboratory analysis was conducted at the Ministry of the Environment facilities in Rexdale, Ontario.

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

BELLEVILLE WATER TREATMENT PLANT

FIGURE 2

BELLEVILLE WATER TREATMENT PLANT

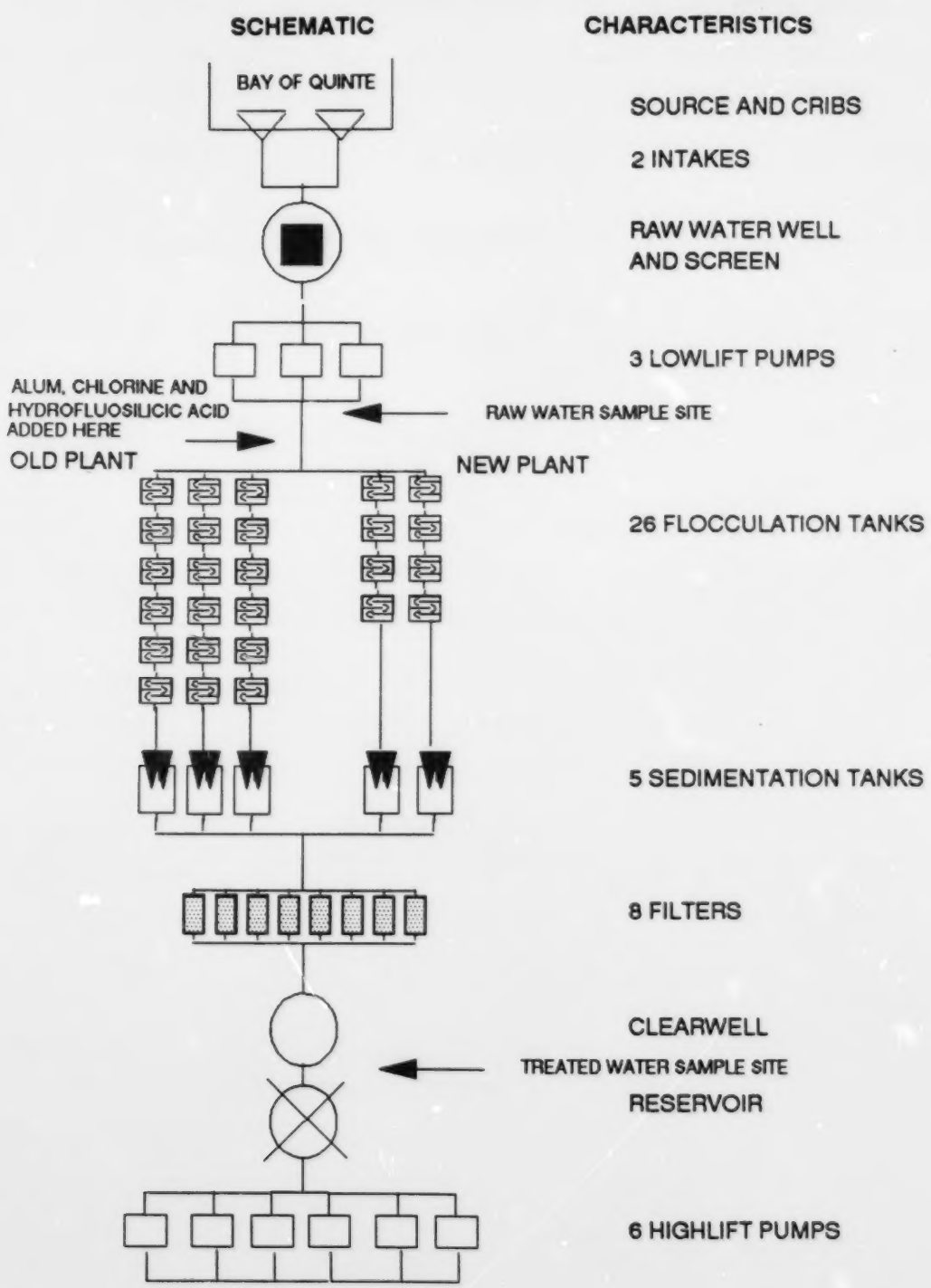

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

IN-PLANT MONITORING BELLEVILLE WATER TREATMENT PLANT 1989

PARAMETER	LOCATION	FREQUENCY
Algae	Raw water well	weekly
Colour	Highlift discharge	daily
Fluoride	Raw water well	daily
	Highlift disharge	daily
Chlorine residuals	Mixing chamber	3 hours
(total)	Highlift discharge	hourly
(free)	Highlift discharge	daily
Odour	Mixing chamber	weekly
pH	Raw water well	daily
	Highlift discharge	daily
Temperature	Raw water well	daily
Turbidity	Raw water well	daily
	Highlift Discharge	daily

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT
GENERAL INFORMATION

BELLEVILLE WATER TREATMENT PLANT

LOCATION:	SIDNEY STREET BELLEVILLE, ONTARIO (613-966-3651)
SOURCE:	RAW WATER SOURCE - BAY OF QUINTE
DESIGN CAPACITY:	54.5 (1000 M^3/DAY)
OPERATION:	MUNICIPALITY
PLANT SUPERINTENDENT:	D. MIDDLETON
MINISTRY REGION:	SOUTHEASTERN
DISTRICT OFFICER:	J. BISHOP

MUNICIPALITY SERVED	POPULATION
BELLEVILLE	36,720

RESULTS

Field Chemistry measurements were recorded on the day of sampling and were entered onto the DWSP data base as submitted by plant personnel.

Table 3 contains information on the sample day retention time, flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analysed by parameter and by water type. The number of times that a positive or trace result was detected is also reported. Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occasion.

Table 6 lists all parameters analysed in the DWSP.

Associated guidelines and detection limits are also supplied on tables 5 and 6. Parameters are listed alphabetically in each scan.

DISCUSSION

General

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWOs) as defined in the 1984 publication (ISBN 0-7743-8985-0). The Province of Ontario has health related and aesthetic objectives for 49 parameters. These are currently under review. When an ODWO is not available guidelines/limits from other agencies are consulted. The Parameters Listing System (PALIS) recently published (ISBN 0-7729-4461-X) by the MOE catalogues and keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Many of the compounds detected are naturally occuring or are treatment by-products.

IN THIS REPORT, DISCUSSION IS LIMITED TO THE TREATED AND DISTRIBUTED WATER AND ADDRESSES ONLY THOSE PARAMETERS WITH CONCENTRATIONS ABOVE GUIDELINE VALUES AND ORGANICS WITH DETECTED POSITIVE RESULTS.

Results of treated and distributed water indicate that no applicable health related guidelines were exceeded.

Bacteriology

Standard Plate Count

The ODWO for Standard Plate Count of 500 counts/mL (indicating some deterioration) was exceeded, once in the treated water in July, three times in the Site 1 water in June, July and August and twice in the Site 2 water in July and September.

Inorganic and Physical Parameters

Colour

The aesthetic ODWO of 5.00 True Colour Units (TCU) was exceeded in the July Site 1 and Site 2 water samples.

Aluminum

The plant operational guideline of 100 µg/L as Al in the water leaving the plant was exceeded eleven times in the treated water.

Organic Parameters

Trihalomethanes

Trihalomethanes (THMs) are acknowledged to be produced during the water treatment process and will always occur in chlorinated

waters. THMs are comprised of Chloroform, Chlorodibromomethane and Dichlorobromomethane. Bromoform occurs occasionally. Results are reported for the individual compounds as well as for total THMs. All Total THM occurrences, ranging from 78.2 to 167 µg/L, were well below the ODWO of 350 µg/L.

CONCLUSIONS

The Belleville Water Treatment plant for the sample year of 1989 produced good quality water at the plant and this was maintained in the distribution system.

No health related guidelines, for organic or inorganic parameters, were exceeded during 1987, 1988 or 1989.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP SAMPLE DAY CONDITIONS FOR 1989

SAMPLE DAY CONDITIONS			TREATMENT CHEMICAL DOSAGES (MG/L)		
			PRE-CHLORINATION	COAGULATION	FLUORIDATION
			CHLORINE	ALUM LIQUID	HYDROFLUOSILICIC ACID
DATE	DELAY TIME(HRS)	FLOW (1000M3)			
JAN 04	4.2	22.7	3.25	30.00	1.30
FEB 07	3.6	25.0	3.85	31.00	1.35
MAR 07	3.5	25.5	3.60	40.00	1.40
APR 04	.0	25.0	4.60	46.00	1.40
MAY 02	4.0	24.0	3.85	46.50	1.55
JUN 06	3.3	29.5	4.60	40.00	1.36
JUL 05	.0	40.0	4.90	51.00	1.40
AUG 09	3.7	34.1	5.10	50.00	1.40
SEP 06	3.7	30.0	5.00	50.00	1.35
OCT 03	5.0	27.2	4.10	50.00	1.44
NOV 07	4.0	27.0	3.40	50.00	1.50
DEC 05	.0	26.0	3.60	40.00	1.40

* THE DELAY TIME BETWEEN THE RAW AND TREATED WATER SAMPLING, SHOULD ESTIMATE THE RETENTION TIME

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1			SITE 2		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
BACTERIOLOGICAL	FECAL COLIFORM MF	12	8	0	.	.	.	.	.	.	.	.	.
	STANDRD PLATE CNT MF	.	.	.	12	2	0	11	5	0	11	3	0
	TOTAL COLIFORM MF	12	8	0	12	1	0	12	1	0	11	1	0
	T COLIFORM BCKGRD MF	12	12	0	12	2	0	12	9	0	11	0	0
*TOTAL SCAN BACTERIOLOGICAL		36	28	0	36	5	0	35	15	0	33	4	0
*TOTAL GROUP BACTERIOLOGICAL		36	28	0	36	5	0	35	15	0	33	4	0
CHEMISTRY (FLD)	FLD CHLORINE (COMB)	.	.	.	12	12	0	22	19	0	24	23	0
	FLD CHLORINE FREE	.	.	.	12	12	0	20	9	0	19	8	0
	FLD CHLORINE (TOTAL)	.	.	.	12	12	0	23	20	0	24	23	0
	FLD PH	12	12	0	12	12	0	24	24	0	24	24	0
	FLD TEMPERATURE	12	12	0	12	12	0	23	23	0	24	24	0
	FLD TURBIDITY	12	12	0	12	12	0	.	.	.	.	.	.
*TOTAL SCAN CHEMISTRY (FLD)		36	36	0	72	72	0	112	95	0	115	102	0
CHEMISTRY (LAB)	ALKALINITY	12	12	0	12	12	0	24	24	0	23	23	0
	CALCIUM	12	12	0	12	12	0	24	24	0	23	23	0
	CYANIDE	12	0	0	11	0	0	12	0	0	12	0	0
	CHLORIDE	12	12	0	12	12	0	24	24	0	23	23	0
	COLOUR	12	12	0	12	10	2	24	24	0	23	23	0
	CONDUCTIVITY	12	12	0	12	12	0	24	24	0	23	23	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE

SUMMARY TABLE OF RESULTS (1989)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
CHEMISTRY (LAB)	FLUORIDE	12	11	1	12	12	0	24	24	0	24	24	0
	HARDNESS	12	12	0	12	12	0	24	24	0	23	23	0
	IONCAL	12	12	0	12	12	0	24	24	0	24	23	0
	LANGELIERS INDEX	12	12	0	4	4	0	10	9	0	6	6	0
	MAGNESIUM	12	12	0	12	12	0	24	24	0	23	23	0
	SODIUM	12	12	0	12	12	0	24	24	0	23	23	0
	AMMONIUM TOTAL	12	11	0	12	4	5	24	21	3	23	12	8
	NITRITE	12	10	2	12	1	9	24	0	21	23	0	19
	TOTAL NITRATES	12	8	3	12	8	2	24	18	4	23	15	5
	NITROGEN TOT KJELD	12	12	0	12	12	0	24	24	0	23	23	0
	PH	12	12	0	12	12	0	24	24	0	23	23	0
	PHOSPHORUS FIL REACT	12	3	7	12	0	3	.	.	.	.	.	.
	PHOSPHORUS TOTAL	12	11	0	12	0	11	.	.	.	.	.	.
	SULPHATE	12	12	0	12	12	0	24	24	0	23	23	0
	TURBIDITY	12	12	0	12	12	0	24	24	0	23	23	0
*TOTAL SCAN CHEMISTRY (LAB)		252	222	13	243	183	32	430	384	28	411	356	32
METALS	SILVER	12	0	2	12	0	2	24	0	12	24	0	6
	ALUMINUM	12	12	0	12	12	0	24	24	0	24	24	0
	ARSENIC	12	4	8	12	2	10	24	2	22	24	4	20
	BARIUM	12	12	0	12	12	0	24	24	0	24	24	0
	BORON	12	11	1	12	11	1	24	20	4	24	20	4
	BERYLLIUM	12	0	9	12	0	9	24	2	16	24	1	20

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
METALS	CADMIUM	12	0	6	12	0	3	24	1	8	24	0	1
	COBALT	12	0	11	12	0	10	24	1	22	24	0	16
	CHROMIUM	12	12	0	12	11	1	24	21	0	24	21	0
	COPPER	12	7	5	12	5	7	24	24	0	24	24	0
	IRON	12	8	4	12	1	7	24	23	1	24	6	18
	MERCURY	12	0	3	12	0	5	12	8	1	12	8	4
	MANGANESE	12	12	0	12	12	0	24	24	0	24	24	0
	MOLYBDENUM	12	5	7	12	5	7	24	14	10	24	14	10
	NICKEL	12	0	6	12	0	5	24	11	7	24	2	10
	LEAD	12	12	0	12	4	7	24	18	6	24	19	4
	ANTIMONY	12	12	0	12	12	0	24	24	0	24	24	0
	SELENIUM	12	0	6	12	1	6	24	1	13	24	0	16
	STRONTIUM	12	12	0	12	12	0	24	24	0	24	24	0
	TITANIUM	12	12	0	12	12	0	24	24	0	24	24	0
	THALLIUM	12	0	3	12	0	5	24	2	6	24	1	5
	URANIUM	12	10	2	12	3	9	24	2	21	24	2	22
	VANADIUM	12	5	7	12	9	3	24	16	8	24	18	6
	ZINC	12	10	2	12	12	0	24	23	1	24	24	0
*TOTAL SCAN METALS		288	156	82	288	136	97	564	333	158	564	308	162
*TOTAL GROUP INORGANIC & PHYSICAL		576	414	95	603	391	129	1106	812	186	1090	766	194
CHLOROAROMATICS	HEXACHLOROBUTADIENE	12	0	0	11	0	0	12	0	0	11	0	0
	123 TRICHLOROBENZENE	12	0	0	11	0	0	12	0	0	11	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
CHLOROAROMATICS	1234 T-CHLOROBENZENE	12	0	0	11	0	0	12	0	0	11	0	0
	1235 T-CHLOROBENZENE	12	0	0	11	0	0	12	0	0	11	0	0
	124 TRICHLOROBENZENE	12	0	0	11	0	0	12	0	0	11	0	0
	1245 T-CHLOROBENZENE	12	0	0	11	0	0	12	0	0	11	0	0
	135 TRICHLOROBENZENE	12	0	0	11	0	0	12	0	0	11	0	0
	HCB	12	0	0	11	0	0	12	0	0	11	0	0
	HEXACHLOROETHANE	12	0	0	11	0	0	12	0	0	11	0	0
	OCTACHLOROSTYRENE	12	0	0	11	0	0	12	0	0	11	0	0
	PENTACHLOROBENZENE	12	0	0	11	0	0	12	0	0	11	0	0
	236 TRICHLOROTOLUENE	12	0	0	11	0	0	12	0	0	11	0	0
	245 TRICHLOROTOLUENE	12	0	0	11	0	0	12	0	0	11	0	0
	26A TRICHLOROTOLUENE	12	0	0	11	0	0	12	0	0	11	0	0
*TOTAL SCAN CHLOROAROMATICS		168	0	0	154	0	0	168	0	0	154	0	0
CHLOROPHENOLS	234 TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	2345 T-CHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	2356 T-CHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	245-TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	246-TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	PENTACHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
*TOTAL SCAN CHLOROPHENOLS		12	0	0	12	0	0	0	0	0	0	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE

SUMMARY TABLE OF RESULTS (1989)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PAH	PHENANTHRENE	12	0	0	12	0	0	0	0	0	0	0	0
	ANTHRACENE	12	0	0	12	0	0	0	0	0	0	0	0
	FLUORANTHENE	12	0	0	12	0	0	0	0	0	0	0	0
	PYRENE	12	0	0	12	0	0	0	0	0	0	0	0
	BENZO(A)ANTHRACENE	12	0	0	12	0	0	0	0	0	0	0	0
	CHRYSENE	12	0	0	12	0	0	0	0	0	0	0	0
	DIMETH. BENZ(A)ANTHR	3	0	0	3	0	0	0	0	0	0	0	0
	BENZO(E) PYRENE	12	0	0	12	0	0	0	0	0	0	0	0
	BENZO(B) FLUORANTHEN	12	0	0	12	0	0	0	0	0	0	0	0
	PERYLENE	12	0	0	12	0	0	0	0	0	0	0	0
	BENZO(K) FLUORANTHEN	12	0	0	12	0	0	0	0	0	0	0	0
	BENZO(A) PYRENE	5	0	0	5	0	0	0	0	0	0	0	0
	BENZO(G,H,I) PERYLEN	12	0	0	12	0	0	0	0	0	0	0	0
	DIBENZO(A,H) ANTHRAC	12	0	0	12	0	0	0	0	0	0	0	0
	INDENO(1,2,3-C,D) PY	12	0	0	12	0	0	0	0	0	0	0	0
	BENZO(B) CHRYSENE	12	0	0	12	0	0	0	0	0	0	0	0
	CORONENE	12	0	0	12	0	0	0	0	0	0	0	0
*TOTAL SCAN PAH		188	0	0	188	0	0	0	0	0	0	0	0
PESTICIDES & PCB	ALDRIN	12	0	0	11	0	0	12	0	0	11	0	0
	ALPHA BHC	12	0	2	11	0	1	12	0	2	11	0	2
	BETA BHC	12	0	0	11	0	0	12	0	0	11	0	0
	LINDANE	12	0	2	11	0	1	12	0	1	11	0	1

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
PESTICIDES & PCB	ALPHA CHLORDANE	12	0	0	11	0	0	12	0	0	11	0	0
	GAMMA CHLORDANE	12	0	0	11	0	0	12	0	0	11	0	0
	DIELDRIN	12	0	0	11	0	0	12	0	0	11	0	0
	METHOXYCHLOR	12	0	0	11	0	0	12	0	0	11	0	0
	ENDOSULFAN 1	12	0	0	11	0	0	12	0	0	11	0	0
	ENDOSULFAN II	12	0	0	11	0	0	12	0	0	11	0	0
	ENDRIN	12	0	0	11	0	0	12	0	0	11	0	0
	ENDOSULFAN SULPHATE	12	0	0	11	0	0	12	0	0	11	0	0
	HEPTACHLOR EPOXIDE	12	0	0	11	0	0	12	0	0	11	0	0
	HEPTACHLOR	12	0	0	11	0	0	12	0	0	11	0	0
	MIREX	12	0	0	11	0	0	12	0	0	11	0	0
	OXYCHLORDANE	12	0	0	11	0	0	12	0	0	11	0	0
	OPDDT	12	0	0	11	0	0	12	0	0	11	0	0
	PCB	12	0	0	11	0	0	12	0	0	11	0	0
	DDD	12	0	0	11	0	0	12	0	0	11	0	0
	PPDDE	12	0	0	11	0	0	12	0	0	11	0	0
	PPDDT	12	0	0	11	0	0	12	0	0	11	0	0
	AMETRINE	12	0	0	12	0	0	7	0	0	7	0	0
	ATRAZINE	12	0	0	12	0	0	7	0	0	7	0	0
	ATRATONE	12	0	0	12	0	0	7	0	0	7	0	0
	CYANAZINE (BLADEX)	12	0	0	12	0	0	7	0	0	7	0	0
	D-ETHYL ATRAZINE	12	0	0	12	0	0	7	0	0	7	0	0
	D-ETHYL SIMAZINE	12	0	0	12	0	0	7	0	0	7	0	0
	PROMETONE	12	0	0	12	0	0	7	0	0	7	0	0
	PROPAZINE	12	0	0	12	0	0	7	0	0	7	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
PESTICIDES & PCB	PROMETRYNE	12	0	0	12	0	0	7	0	0	7	0	0
	METRIBUZIN (SENCOR)	12	0	0	12	0	0	7	0	0	7	0	0
	SIMAZINE	12	0	0	12	0	0	7	0	0	7	0	0
	ALACHLOR (LASSO)	12	0	0	12	0	0	7	0	0	7	0	0
	METOLACHLOR	12	0	0	12	0	0	7	0	0	7	0	0
*TOTAL SCAN PESTICIDES & PCB		408	0	4	387	0	2	343	0	3	322	0	3
PHENOLICS	PHENOLICS	12	11	1	12	11	1	0	0	0	0	0	0
*TOTAL SCAN PHENOLICS		12	11	1	12	11	1	0	0	0	0	0	0
SPECIFIC PESTICIDES	TOXAPHENE	12	0	0	11	0	0	12	0	0	11	0	0
	2,4,5-T	2	0	0	2	0	0	.	.	.	.	.	.
	2,4-D	2	0	0	2	0	0	.	.	.	.	.	.
	2,4-DB	2	0	0	2	0	0	.	.	.	.	.	.
	2,4 D PROPIONIC ACID	2	0	0	2	0	0	.	.	.	.	.	.
	DICAMBA	2	0	0	2	0	0	.	.	.	.	.	.
	PICHLORAM	0	0	0	0	0	0	.	.	.	.	.	.
	SILVEX	2	0	0	2	0	0	.	.	.	.	.	.
	DIAZINON	2	0	0	2	0	0	.	.	.	.	.	.
	DICHLOROVOS	2	0	0	2	0	0	.	.	.	.	.	.
	CHLORPYRIFOS	2	0	0	2	0	0	.	.	.	.	.	.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
SPECIFIC PESTICIDES	ETHION	2	0	0	2	0	0	.	.	.	.	.	.
	AZINPHOS-METHYL	0	0	0	0	0	0	.	.	.	.	.	.
	MALATHION	2	0	0	2	0	0	.	.	.	.	.	.
	MEVINPHOS	2	0	0	2	0	0	.	.	.	.	.	.
	METHYL PARATHION	2	0	0	2	0	0	.	.	.	.	.	.
	METHYLTRITHION	2	0	0	2	0	0	.	.	.	.	.	.
	PARATHION	2	0	0	2	0	0	.	.	.	.	.	.
	PHORATE	2	0	0	2	0	0	.	.	.	.	.	.
	RELDAN	2	0	0	2	0	0	.	.	.	.	.	.
	RONNEL	2	0	0	2	0	0	.	.	.	.	.	.
	AMINOCARB	1	0	0	1	0	0	.	.	.	.	.	.
	BENOMYL	1	0	0	1	0	0	.	.	.	.	.	.
	BUX	0	0	0	0	0	0	.	.	.	.	.	.
	CARBOFURAN	2	0	0	2	0	0	.	.	.	.	.	.
	CICP	2	0	0	2	0	0	.	.	.	.	.	.
	DIALLATE	2	0	0	2	0	0	.	.	.	.	.	.
	EPTAM	2	0	0	2	0	0	.	.	.	.	.	.
	IPC	2	0	0	2	0	0	.	.	.	.	.	.
	PROPOXUR	2	0	0	2	0	0	.	.	.	.	.	.
	CARBARYL	2	0	0	2	0	0	.	.	.	.	.	.
	BUTYLATE	2	0	0	2	0	0	.	.	.	.	.	.
*TOTAL SCAN SPECIFIC PESTICIDES		66	0	0	65	0	0	12	0	0	11	0	0
VOLATILES	BENZENE	12	0	1	12	0	1	12	0	1	12	0	3

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
VOLATILES	TOLUENE	12	0	2	12	0	7	12	0	5	12	0	4
	ETHYLBENZENE	12	0	1	12	0	6	12	0	1	12	0	1
	P-XYLENE	12	0	0	12	0	0	12	0	0	12	0	0
	M-XYLENE	12	0	0	12	0	1	12	0	1	12	0	0
	O-XYLENE	12	0	1	12	0	3	12	0	2	12	0	1
	STYRENE	12	0	5	12	0	6	12	0	8	12	0	9
	1,1 DICHLOROETHYLENE	12	0	0	12	0	0	12	0	0	12	0	0
	METHYLENE CHLORIDE	12	0	0	12	0	0	12	0	0	12	0	0
	T1,2DICHLOROETHYLENE	12	0	0	12	0	0	12	0	0	12	0	0
	1,1 DICHLOROETHANE	12	0	0	12	0	0	12	0	0	12	0	0
	CHLOROFORM	12	2	9	12	12	0	12	12	0	12	12	0
	111, TRICHLOROETHANE	12	0	5	12	0	1	12	0	1	12	0	1
	1,2 DICHLOROETHANE	12	0	0	12	0	0	12	0	0	12	0	0
	CARBON TETRACHLORIDE	12	0	0	12	0	0	12	0	0	12	0	0
	1,2 DICHLOROPROPANE	12	0	0	12	0	0	12	0	0	12	0	0
	TRICHLOROETHYLENE	12	0	0	12	0	0	12	0	0	12	0	0
	DICHLOROBROMOMETHANE	12	0	1	12	12	0	12	12	0	12	12	0
	112 TRICHLOROETHANE	12	0	0	12	0	0	12	0	0	12	0	0
	CHLORODIBROMOMETHANE	12	0	0	12	0	11	12	0	10	12	0	9
	T-CHLOROETHYLENE	12	0	1	12	0	3	12	0	3	12	0	2
	BROMOFORM	12	0	0	12	0	0	12	0	0	12	0	0
	1122 T-CHLOROETHANE	12	0	0	12	0	0	12	0	0	12	0	0
	CHLOROBENZENE	12	0	0	12	0	0	12	0	0	12	0	0
	1,4 DICHLOROBENZENE	12	0	0	12	0	0	12	0	0	12	0	0
	1,3 DICHLOROBENZENE	12	0	0	12	0	0	12	0	0	12	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE

SUMMARY TABLE OF RESULTS (1989)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
VOLATILES	1,2 DICHLOROBENZENE	12	0	0	12	0	0	12	0	0	12	0	0
	ETHLYENE DIBROMIDE	12	0	0	12	0	0	12	0	0	12	0	0
	TOTL TRIHALOMETHANES	12	0	6	12	12	0	12	12	0	12	12	0
*TOTAL SCAN VOLATILES		348	2	32	348	36	39	348	36	32	348	36	30
*TOTAL GROUP ORGANIC		1202	13	37	1166	47	42	871	36	35	835	36	33
TOTAL		1814	455	132	1805	443	171	2012	863	221	1958	806	227

KEY TO TABLE 5 and 6

A ONTARIO DRINKING WATER OBJECTIVES (ODWO)

1. Maximum Acceptable Concentration (MAC)
1+. MAC for Total Trihalomethanes
1*. MAC for Bacteriological Analyses
   Poor water quality is indicated when :
   - total coliform counts > 0 < 5
   - P/A Bottle Test is present after 48 hours
   - Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
   - Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
   - Standard Plate Count should not exceed 500 organisms per ml at 35 ^{0}C within 48 hours
2. Interim Maximum Acceptable Concentration (IMAC)
3. Maximum Desirable Concentration (MDC)
4. Aesthetic or Recommended Operational Guideline
   - hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.

B HEALTH & WELFARE CANADA (H&W)

1. Maximum Acceptable Concentration (MAC)
2. Proposed MAC
3. Interim MAC
4. Aesthetic Objective (AO) (for xylenes, a total)

C WORLD HEALTH ORGANIZATION (WHO)

1. Guideline Value (GV)
2. Tentative GV
3. Aesthetic GV

D US ENVIRONMENTAL PROTECTION AGENCY (EPA)

1. Maximum Contaminant Level (MCL)
2. Suggested No-Adverse Effect Level (SNAEL)
3. Lifetime Health Advisory
4. EPA Ambient Water Quality Criteria
5. Maximum Contaminant Level Goal (MCLG)

F EUROPEAN ECONOMIC COMMUNITY (EEC)

1. Health Related Guideline Level
2. Aesthetic Guideline Level
3. Maximum Admissable Concentration (MADC)

G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE

H USSR MAXIMUM PERMISSIBLE CONCENTRATION

I NEW YORK STATE AMBIENT WATER GUIDELINE

N/A NONE AVAILABLE

INTERPRETATION OF DATA

The interpretation of analytical results that are obtained from measurements near the limit of detection of the measurement process is subject to greater uncertainty than those at higher concentrations. The principle areas of concern relate to whether the substance has actually been detected, whether it has been properly identified, and whether it is an artifact of the measurement process. In other words, false positives can be caused by the instrumentation or the test procedures used, when in fact these compounds are not present in the sample.

There are several methods to treat data from such measurements:
1. Exclude the low-level data because of this uncertainty factor. However, studies of long-term environmental trends and modelling may be adversely affected by exclusion of such data.
2. Qualify these data so the user is aware of the greater uncertainty associated with their use.

For the Drinking Water Surveillance Program, measurements near the limit of detection of the measurement process are reported qualified by the code "<T". Results quantified by "W" indicate a zero measurement. These results are reported for purposes of modelling and long-term trend analysis and no significance should be attributed to a single determination of a substance below "T" (a single determination may well be a false positive). Repeat analysis or additional data are needed before it can be stated with certainty that the substance in question was truly present. On the other hand, it is less likely that repeated detection of a substance at or near the limit of detection at a specific locatio is solely due to an artifact in the measurement system, and mor likely represents a true positive. However the average of such dat is still only an estimate of the amount of substance presen subject to the possible biases of the method used.

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurable Amount
<T	Greater Than Detection Limit But Not Confident (SEE INTERPRETATION OF RESULTS ABOVE)
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!AW	No Data: Analysis Withdrawn
!CR	No Data: Could Not Confirm By Reanalysis
!CS	No Data: Contamination Suspected
!IL	No Data: Sample Incorrectly Labelled
!IP	No Data: Insufficient Preservative
!IS	No Data: Insufficient Sample

!LA	No Data: Laboratory Accident
!LD	No Data: Test Queued After Sample Discarded
!NA	No Data: No Authorization To Perform Reanalysis
!NP	No Data: No Procedure
!NR	No Data: Sample Not Received
!OP	No Data: Obscured Plate
!QU	No Data: Quality Control Unacceptable
!PE	No Data: Procedural Error - Sample Discarded
!PH	No Data: Sample pH Outside Valid Range
!RE	No Data: Received Empty
!RO	No Data: See Attached Report (no numeric results)
!SM	No Data: Sample Missing
!SS	No Data: Send Separate Sample Properly Preserved
!UI	No Data: Indeterminant Interference
!TX	No Data: Time Expired
A3C	Approximate, Total Count Exceeded 300 Colonies
APL	Additional Peak, Large, Not Priority Pollutant
APS	Additional Peak, Less Than, Not Priority Pollutant
CIC	Possible Contamination, Improper Cap
CRO	Calculated Result Only
PPS	Test Performed On Preserved Sample
RMP	P and M-Xylene Not Separated
RRV	Rerun Verification
RVU	Reported Value Unusual
SPS	Several Peaks, Small, Not Priority Pollutant
UCR	Unreliable: Could Not Confirm By Reanalysis
UCS	Unreliable: Contamination Suspected
UIN	Unreliable: Indeterminant Interference
XP	Positive After X Number of Hours

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
BACTERIOLOGICAL						
FECAL COLIFORM MF (CT/100ML)			**DET'N LIMIT = 0**		**GUIDELINE = 0 (A1)**	
JAN	1 T24	.	.	.	.	.
FEB	4 T24	.	.	.	.	.
MAR	0 T24	.	.	.	.	.
APR	0 T48	.	.	.	.	.
MAY	0	.	.	.	.	.
JUN	10	.	.	.	.	.
JUL	4	.	.	.	.	.
AUG	2	.	.	.	.	.
SEP	12	.	.	.	.	.
OCT	BDL	.	.	.	.	.
NOV	3	.	.	.	.	.
DEC	3	.	.	.	.	.
STANDRD PLATE CNT MF ( )			**DET'N LIMIT =**		**GUIDELINE =**	
JAN	.	1 <=>	.	6 <=>	.	0 <=>
FEB	.	2 <=>	.	2 <=>	.	3 <=>
MAR	.	3 <=>	.	0 <=>	.	0 <=>
APR	.	0 <=>	.	4 <=>	.	1 <=>
MAY	.	1 <=>	.	7 <=>	.	1 <=>
JUN	.	0 <=>	.	580	.	.
JUL	.	3020	.	580	.	1170
AUG	.	170	.	12000	.	250
SEP	.	3 <=>	.	ILA	.	2400 >
OCT	.	1 <=>	.	65	.	30 <=>
NOV	.	0 <=>	.	10	.	2 <=>
DEC	.	0 <=>	.	3 <=>	.	0 <=>
TOTAL COLIFORM MF (CT/100ML)			**DET'N LIMIT = 0**		**GUIDELINE = 5/100ML(A1)**	
JAN	600 A3C	0 T24	.	0 T24	.	0 T24
FEB	13000 R48	1 T24	.	0 T24	.	0 T24
MAR	22 R48	0 T24	.	0 T24	.	0 T24
APR	260 A3C	0 T48	.	1 T24	.	0 T24
MAY	10 A3C	0	.	0	.	0
JUN	BDL	0	.	0 A3C	.	.
JUL	BDL	0	.	0 A3C	.	0
AUG	BDL	0	.	BDL	.	0
SEP	12 A3C	0	.	0 A3C	.	0
OCT	12 A3C	0	.	0 A3C	.	2
NOV	30 <=>	0	.	0	.	0
DEC	600	0	.	0	.	0
T COLIFORM BCKGRD MF (CT/100ML)			**DET'N LIMIT = 0**		**GUIDELINE = N/A**	
JAN	10200 T24	0 T24	.	1 T24	.	0 T24
FEB	42000 R48	1 T24	.	1 T24	.	0 T24
MAR	78 R48	0 T24	.	0 T24	.	0 T24

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
APR	14800 A3C	0 T48	.	0 T24	.	0 T24
MAY	4800 >	0	.	8	.	0
JUN	48000 >	0	.	2400 >	.	.
JUL	14000 A3C	1	.	460 A3C	.	0
AUG	43000 A3C	0	.	1110	.	0
SEP	5200	0	.	480 A3C	.	0
OCT	3280 A3C	0	.	1100 A3C	.	0
NOV	710	0	.	31	.	0
DEC	5000	0	.	0	.	0

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (FLD)						
FLD CHLORINE (COMB) ( )			DET'N LIMIT =		GUIDELINE =	
JAN	.	.250	.	.200	.100	.300
FEB	.	.250	.100	.200	.100	.300
MAR	.	.290	.100	.200	.100	.300
APR	.	.350	.	.200	.300	.300
MAY	.	.220	.100	.200	.100	.200
JUN	.	.300	.300	.200	.100	.200
JUL	.	.200	.100	.200	.100	.300
AUG	.	.300	.000	.100	.100	.200
SEP	.	.350	.000	.300	.000	.200
OCT	.	.300	.100	.200	.100	.200
NOV	.	.400	.000	.300	.100	.300
DEC	.	.340	.100	.200	.100	.200
FLD CHLORINE FREE ( )			DET'N LIMIT =		GUIDELINE =	
JAN	.	.690	.	.100	.	.200
FEB	.	.650	.	.100	.	.200
MAR	.	.730	.	.100	.	.200
APR	.	.800	.100	.100	.	.600
MAY	.	.700	.	.100	.	.700
JUN	.	.450	.000	.100	.000	.100
JUL	.	.400	.000	.100	.000	.000
AUG	.	1.100	.000	.000	.000	.000
SEP	.	.900	.000	.000	.000	.000
OCT	.	.600	.000	.000	.000	.100
NOV	.	.750	.000	.000	.000	.000
DEC	.	.800	.000	.100	.000	.100
FLD CHLORINE (TOTAL) ( )			DET'N LIMIT =		GUIDELINE =	
JAN	.	.940	.	.300	.100	.500
FEB	.	.900	.100	.300	.100	.500
MAR	.	1.020	.100	.300	.100	.500
APR	.	1.150	.100	.300	.300	.900
MAY	.	.920	.100	.300	.100	.900
JUN	.	.750	.300	.300	.100	.300
JUL	.	.600	.100	.300	.100	.300
AUG	.	1.400	.000	.100	.100	.200
SEP	.	1.250	.000	.300	.000	.200
OCT	.	.900	.100	.200	.100	.300
NOV	.	1.150	.000	.300	.100	.300
DEC	.	1.140	.100	.300	.100	.300
FLD PH (DIMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)	
JAN	7.600	6.850	7.200	7.000	7.300	7.000
FEB	7.600	6.700	7.000	6.800	7.200	7.000
MAR	7.600	6.700	7.000	6.800	7.200	7.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
APR	7.500	6.600	6.800	7.000	6.800	6.800
MAY	7.900	6.600	7.000	6.800	6.800	6.800
JUN	8.000	6.700	7.000	6.800	6.800	6.800
JUL	7.800	6.600	7.200	6.800	7.400	7.000
AUG	8.300	6.600	7.200	7.000	7.100	7.000
SEP	8.500	6.800	7.000	6.800	7.000	6.900
OCT	8.300	6.700	6.800	6.800	6.900	6.800
NOV	7.800	6.600	7.000	6.800	7.100	7.000
DEC	7.700	6.700	6.800	7.000	7.100	6.800
FLD TEMPERATURE (DEG.C)			DET'N LIMIT = N/A		GUIDELINE = 15 (A1)	
JAN	1.500	4.000	22.000	9.000	15.000	5.500
FEB	1.500	3.500	19.000	13.000	18.000	4.500
MAR	2.500	3.500	23.000	9.000	17.000	4.500
APR	3.000	4.500	21.000	12.000	23.000	5.000
MAY	11.000	11.500	22.000	12.000	17.000	8.000
JUN	20.000	20.000	20.500	16.000	21.000	16.000
JUL	24.000	25.000	24.000	21.000	26.000	22.000
AUG	23.500	24.000	23.000	22.000	21.500	22.000
SEP	21.000	21.000	24.000	21.000	23.000	21.000
OCT	16.000	16.000	.	18.500	20.000	18.000
NOV	8.500	9.000	24.000	16.000	21.000	13.000
DEC	1.500	2.000	25.000	9.000	20.000	8.000
FLD TURBIDITY (FTU)			DET'N LIMIT = N/A		GUIDELINE = 1.0 (A1)	
JAN	1.400	.160	.	.	.	.
FEB	1.900	.320	.	.	.	.
MAR	1.900	.190	.	.	.	.
APR	4.400	.240	.	.	.	.
MAY	2.000	.190	.	.	.	.
JUN	6.800	.460	.	.	.	.
JUL	4.700	.280	.	.	.	.
AUG	8.400	.420	.	.	.	.
SEP	6.400	.380	.	.	.	.
OCT	4.900	.350	.	.	.	.
NOV	3.400	.260	.	.	.	.
DEC	1.800	.300	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (LAB)						
ALKALINITY (MG/L)			DET'N LIMIT = .200		GUIDELINE = 30-500 (A4)	
JAN	108.300	86.400	86.000	85.900	86.900	86.500
FEB	100.500	78.000	78.200	78.200	77.400	78.800
MAR	108.800	82.100	80.600	81.000	81.300	80.700
APR	93.200	62.000	63.200	62.700	60.700	62.200
MAY	90.400	60.000	62.700	61.800	60.800	60.900
JUN	92.500	64.100	65.600	65.300	64.300	63.100
JUL	97.100	61.400	63.800	62.200	61.700	59.600
AUG	102.600	67.900	69.700	69.000	69.300	68.900
SEP	104.600	70.800	71.600	71.700	71.400	71.000
OCT	106.400	73.700	75.400	74.500	74.100	74.600
NOV	113.100	79.400	80.500	82.500	IIS	83.500
DEC	116.700	88.600	89.200	88.200	88.600	88.500
CALCIUM (MG/L)			DET'N LIMIT = .100		GUIDELINE = 100 (F2)	
JAN	44.600	44.400	39.600	40.600	42.200	39.000
FEB	41.600	40.000	40.000	39.200	39.200	39.800
MAR	45.200	44.600	44.800	45.000	44.800	44.600
APR	40.400	39.600	40.200	39.800	39.400	39.800
MAY	36.800	35.800	37.000	36.800	36.400	37.400
JUN	36.600	37.000	37.600	38.000	38.400	37.600
JUL	40.600	40.200	40.000	41.000	40.600	40.600
AUG	38.600	39.400	41.600	40.200	38.200	39.200
SEP	40.000	38.800	38.800	42.200	41.200	41.200
OCT	41.200	40.800	41.200	42.000	41.200	41.200
NOV	42.800	42.600	43.600	43.800	IIS	43.000
DEC	49.000	50.200	51.800	51.200	50.400	51.000
CHLORIDE (MG/L)			DET'N LIMIT = .200		GUIDELINE = 250 (A3)	
JAN	12.600	15.400	15.600	15.100	15.100	14.900
FEB	14.300	17.800	18.600	18.500	18.300	18.000
MAR	18.500	19.400	19.600	19.200	18.800	18.000
APR	13.100	16.600	16.700	16.400	16.000	14.900
MAY	8.600	11.700	12.300	12.000	11.900	11.600
JUN	9.200	12.900	13.400	13.300	13.600	13.400
JUL	8.400	12.800	13.800	12.900	12.800	12.800
AUG	9.500	14.100	14.600	14.200	14.200	13.900
SEP	10.000	14.200	14.700	14.600	14.800	14.900
OCT	11.300	14.700	15.100	15.100	15.100	14.700
NOV	11.700	14.600	14.500	14.200	IIR	14.200
DEC	11.400	14.500	14.900	14.800	14.900	14.800
COLOUR (HZU)			DET'N LIMIT = .5		GUIDELINE = 5.0 (A3)	
JAN	12.000	3.000	5.000	5.000	4.000	3.500
FEB	15.000	3.000	4.500	5.000	3.500	3.000
MAR	16.000	3.000	4.500	4.500	4.000	3.500

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DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
APR	19.000	2.000 <T	4.500	4.500	5.500	2.500
MAY	15.500	2.000 <T	4.000	4.500	3.500	3.000
JUN	15.000	3.500	5.000	5.000	5.500	4.000
JUL	20.500	3.500	5.000	5.500	5.500	5.500
AUG	18.500	3.000	5.000	5.000	4.500	4.500
SEP	16.500	3.500	5.000	4.500	4.500	4.000
OCT	15.000	3.000	4.500	4.500	4.000	3.500
NOV	13.500	2.500	4.000	5.000	IIS	4.500
DEC	18.000	3.000	5.000	5.000	4.500	4.000
CONDUCTIVITY (UMHO/CM)			DET'N LIMIT = 1		GUIDELINE = 400 (F2)	
JAN	282	293	293	291	295	292
FEB	274	285	289	287	286	287
MAR	301	314	310	310	311	305
APR	264	274	276	274	269	266
MAY	242	255	260	258	257	256
JUN	237	249	253	252	251	248
JUL	239	256	262	257	257	255
AUG	248	266	270	266	266	265
SEP	255	268	273	272	271	272
OCT	264	279	283	281	280	280
NOV	277	291	294	290	IIS	289
DEC	293	309	310	306	306	307
FLUORIDE (MG/L)			DET'N LIMIT = .01		GUIDELINE = 2.400 (A1)	
JAN	.040 <T	1.120	1.160	1.060	1.100	1.120
FEB	.080	1.220	1.240	1.220	1.320	1.220
MAR	.100	1.300	1.320	1.300	1.240	1.180
APR	.080	1.060	1.160	1.100	1.160	1.100
MAY	.100	1.180	1.240	1.160	1.220	1.180
JUN	.100	1.160	1.180	1.140	1.180	1.160
JUL	.160	1.200	1.200	1.140	1.180	1.120
AUG	.080	1.160	1.220	1.200	1.180	1.200
SEP	.080	1.120	1.120	1.680	1.140	1.140
OCT	.080	1.180	1.200	1.180	1.180	1.160
NOV	.080	1.200	1.280	1.260	1.260	1.300
DEC	.080	1.200	1.240	1.160	1.240	1.200
HARDNESS (MG/L)			DET'N LIMIT = .500		GUIDELINE = 80-100 (A4)	
JAN	131.000	130.000	117.000	120.000	124.000	117.000
FEB	121.000	117.000	119.000	117.000	117.000	118.000
MAR	129.000	128.000	131.000	132.000	132.000	131.000
APR	119.000	118.000	119.000	118.000	117.000	116.000
MAY	109.000	106.000	110.000	109.000	108.000	111.000
JUN	107.000	108.000	111.000	112.000	113.000	111.000
JUL	118.000	116.000	116.000	119.000	117.000	117.000
AUG	112.000	115.000	120.000	117.000	112.000	114.000

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	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
SEP	118.000	115.000	115.000	123.000	121.000	121.000
OCT	122.000	121.000	121.000	124.000	122.000	121.000
NOV	126.000	126.000	128.000	129.000	IIS	127.000
DEC	141.300	144.500	149.000	148.000	145.000	147.000
IONCAL (DMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	1.219	3.733	4.435	1.898	.619	5.801
FEB	2.161	.126	1.112	.709	1.407	.076
MAR	3.147	.738	2.893	3.938	2.804	3.305
APR	6.170	7.732	7.792	8.232	8.255	8.373
MAY	2.760	.825	2.548	2.098	2.487	5.318
JUN	.838	1.647	2.458	4.051	5.560	5.682
JUL	6.597	7.703	4.951	8.118	7.639	8.270
AUG	1.648	1.910	3.909	1.962	1.773	.829
SEP	.411	.872	3.145	3.238	1.947	2.595
OCT	1.840	2.608	1.358	3.840	2.446	2.906
NOV	1.870	.221	.465	2.543	.000 NAF	.921
DEC	3.920	6.783	6.942	8.196	5.783	6.052
LANGELIERS INDEX (DMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.492	.038	-.014	-.013	-.133	-.198
FEB	.282	-.369	-.339	-.267	-.441	-.497
MAR	.452	-.039	.015	-.011	-.131	-.095
APR	.341	-.119	.015	-.042	-.138	-.092
MAY	.316	-.119	-.008	.064	-.047	-.004
JUN	.285	-.124	-.249	-.256	-.567	-.703
JUL	.071	-.539	-.327	-.426	-.623	-.418
AUG	.519	.172	.195	.177	.147	.166
SEP	.410	-.058	-.035	-.037	-.139	-.122
OCT	.527	.047	.000	.124	.103	.076
NOV	.475	-.296	-.061	.173	-	-.060
DEC	.601	.026	.362	.333	.278	.183
MAGNESIUM (MG/L)			DET'N LIMIT = .050		GUIDELINE = 30 (F2)	
JAN	4.700	4.600	4.500	4.600	4.700	4.600
FEB	4.200	4.200	4.500	4.500	4.600	4.500
MAR	4.100	4.200	4.800	4.900	4.900	4.900
APR	4.500	4.600	4.500	4.600	4.500	4.000
MAY	4.300	4.100	4.200	4.200	4.100	4.200
JUN	3.800	3.700	4.000	4.100	4.100	4.200
JUL	3.900	3.900	4.000	4.000	4.000	3.800
AUG	3.900	4.100	4.000	4.100	4.000	4.000
SEP	4.400	4.400	4.300	4.300	4.400	4.400
OCT	4.700	4.700	4.500	4.600	4.600	4.500
NOV	4.800	4.800	4.800	4.900	IIS	4.900
DEC	4.600	4.650	4.800	4.800	4.700	4.600

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	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
SODIUM (MG/L)			DET'N LIMIT = .200		GUIDELINE = 200 (C3)	
JAN	6.800	7.000	7.200	7.000	7.200	6.800
FEB	8.200	8.400	9.000	8.600	9.400	8.600
MAR	9.000	8.800	9.200	9.200	9.000	8.400
APR	7.400	7.200	7.400	7.200	6.600	6.800
MAY	4.800	4.800	5.000	4.800	4.600	4.600
JUN	5.000	5.200	5.400	5.400	5.400	5.400
JUL	5.000	5.000	5.400	4.800	4.800	4.800
AUG	5.800	5.800	6.000	5.800	5.800	5.800
SEP	6.200	6.000	6.000	5.800	5.800	6.200
OCT	6.400	6.000	6.400	6.400	6.400	6.400
NOV	6.600	6.600	6.800	6.600	IIS	6.600
DEC	6.800	7.000	6.200	6.400	6.200	6.200
AMMONIUM TOTAL (MG/L)			DET'N LIMIT = 0.002		GUIDELINE = .05 (F2)	
JAN	.086	.010	.034	.014	.028	.012
FEB	.102	.016	.028	.022	.030	.014
MAR	.020	BDL	.016	.004 <T	.014	BDL
APR	.096	.010	.026	.016	.026	.008 <T
MAY	.068	.006 <T	.100	.012	.018	.006 <T
JUN	.042	.006 <T	.020	.010	.014	BDL
JUL	.076	.010	.052	.022	.018	.008
AUG	BDL	.004 <T	.016	.018	.006 <T	.004 <T
SEP	.084	.004 <T	.032	.022	.020	.012
OCT	.034	.002 <T	.028	.014	.010	.006 <T
NOV	.038	BDL	.024	.012	IIS	.002 <T
DEC	.026	BDL	.004 <T	.004 <T	.008 <T	BDL
NITRITE (MG/L)			DET'N LIMIT = 0.001		GUIDELINE = 1.000 (A1)	
JAN	.018	.002 <T	.003 <T	.003 <T	.002 <T	.002 <T
FEB	.012	.002 <T	.003 <T	.002 <T	.003 <T	.002 <T
MAR	.010	BDL	.001 <T	BDL	.001 <T	BDL
APR	.071	.001 <T	.002 <T	.002 <T	.003 <T	.001 <T
MAY	.006	.001	.002 <T	.001 <T	.002 <T	BDL
JUN	.007	.002 <T	.003 <T	.003 <T	.003 <T	.003 <T
JUL	.077	.001 <T	.003 <T	.002 <T	.002 <T	.001 <T
AUG	.002 <T	.001 <T	BDL	BDL	BDL	BDL
SEP	.005	.004 <T	.004 <T	.003 <T	.004 <T	.004 <T
OCT	.003 <T	.001 <T	.001 <T	.001 <T	.001 <T	.001 <T
NOV	.008	BDL	.002 <T	.002 <T	IIS	.001 <T
DEC	.007	.002 <T	.002 <T	.001 <T	.002 <T	.001 <T
TOTAL NITRATES (MG/L)			DET'N LIMIT = .020		GUIDELINE = 10.000 (A1)	
JAN	.260	.265	.255	.220	.350	.255
FEB	.355	.340	.375	.365	.400	.360
MAR	.315	.325	.355	.320	.430	.295
APR	.695	.605	.570	.545	.585	.460

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	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
MAY	.150	1.000	.195	.170	.165	.145
JUN	.005 <T	BDL	BDL	BDL	.035	BDL
JUL	.105	.025	.040	.030	.100	.015 <T
AUG	.005 <T	.010 <T	.035	.015 <T	.010 <T	.015 <T
SEP	.005 <T	.010 <T	.065	.020 <T	.015 <T	.015 <T
OCT	BDL	BDL	.015 <T	.005 <T	BDL	BDL
NOV	.150	.140	.170	.150	IIS	.160
DEC	.295	.335	.415	.355	.340	.350
NITROGEN TOT KJELD (MG/L)			DET'N LIMIT = .020		GUIDELINE = N/A	
JAN	.620	.390	.370	.370	.480	.410
FEB	.640	.400	.460	.460	.470	.400
MAR	.520	.320	.340	.320	.330	.330
APR	.740	.310	.340	.320	.360	.300
MAY	.500	.260	.400	.220	.230	.210
JUN	.780	.270	.300	.290	.290	.270
JUL	.680	.280	.470	.280	.300	.340
AUG	.790	.425	.370	.340	.320	.350
SEP	1.030	.410	.410	.360	.350	.360
OCT	.850	.340	.430	.390	.360	.340
NOV	.760	.350	.350	.350	IIS	.340
DEC	.610	.390	.350	.350	.340	.530
PH (DMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)	
JAN	8.240	7.890	7.890	7.880	7.740	7.710
FEB	8.090	7.570	7.600	7.680	7.510	7.440
MAR	8.200	7.840	7.900	7.870	7.750	7.790
APR	8.190	7.920	8.040	7.990	7.910	7.940
MAY	8.210	7.970	8.050	8.130	8.030	8.060
JUN	8.170	7.920	7.780	7.770	7.460	7.340
JUL	7.890	7.490	7.690	7.590	7.400	7.620
AUG	8.340	8.170	8.160	8.160	8.150	8.160
SEP	8.210	7.930	7.950	7.910	7.820	7.840
OCT	8.310	8.000	7.940	8.060	8.050	8.020
NOV	8.220	7.610	7.830	8.050	IIS	7.820
DEC	8.280	7.820	8.140	8.120	8.070	7.970
PHOSPHORUS FIL REACT (MG/L)			DET'N LIMIT = .0005		GUIDELINE = N/A	
JAN	.005 <T	.000 <T	.	.	.	.
FEB	BDL	BDL	.	.	.	.
MAR	.000 <T	BDL	.	.	.	.
APR	.003	BDL	.	.	.	.
MAY	.001 <T	BDL	.	.	.	.
JUN	.000 <T	BDL	.	.	.	.
JUL	.004	BDL	.	.	.	.
AUG	.001 <T	BDL	.	.	.	.
SEP	.001 <T	.001 <T	.	.	.	.

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	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
OCT	.003	.001 <T	.	.	.	.
NOV	BDL	BDL	.	.	.	.
DEC	.001 <T	BDL	.	.	.	.
PHOSPHORUS TOTAL (MG/L)			DET'N LIMIT = .002		GUIDELINE = .40 (F2)	
JAN	BDL	BDL	.	.	.	.
FEB	.020	.005 <T	.	.	.	.
MAR	.016	.006 <T	.	.	.	.
APR	.035	.003 <T	.	.	.	.
MAY	.020	.003 <T	.	.	.	.
JUN	.051	.009 <T	.	.	.	.
JUL	.041	.004 <T	.	.	.	.
AUG	.057	.007 <T	.	.	.	.
SEP	.051	.008 <T	.	.	.	.
OCT	.046	.006 <T	.	.	.	.
NOV	.032	.004 <T	.	.	.	.
DEC	.016	.003 <T	.	.	.	.
SULPHATE (MG/L)			DET'N LIMIT = .200		GUIDELINE = 500. (A3)	
JAN	16.300	29.510	28.940	28.940	28.940	29.100
FEB	13.850	29.750	29.540	29.310	29.580	29.830
MAR	17.280	36.700	36.360	36.020	36.620	36.330
APR	13.170	34.860	35.020	34.570	34.500	34.240
MAY	13.350	36.070	35.620	36.290	35.280	35.300
JUN	12.950	33.300	33.320	33.260	33.000	32.930
JUL	10.820	37.130	37.240	37.560	37.550	38.420
AUG	10.560	36.090	36.420	36.750	35.770	35.810
SEP	11.950	36.740	37.590	37.540	37.210	37.450
OCT	10.920	34.930	35.340	35.340	35.590	34.690
NOV	13.010	38.080	39.600	35.760	115	35.020
DEC	15.710	37.720	38.670	37.340	37.580	38.380
TURBIDITY (FTU)			DET'N LIMIT = .02		GUIDELINE = 1.00 (A1)	
JAN	1.140	.420	.910	.770	.720	.970
FEB	2.700	.380	.530	.570	.570	.480
MAR	1.600	.440	.640	.690	.540	.650
APR	5.600	.580	.910	.940	3.300 RRV	.650
MAY	2.600	.510	.880	.490	.630	.750
JUN	8.600	.620	.750	.560	.900	.540
JUL	5.000	.430	.580	.610	.450	.380
AUG	7.500	.750	.640	.670	.950	.960
SEP	6.500	.850	.520	.350	.380	.430
OCT	5.700	.700	.750	.[illegible]0	1.010	.870
NOV	5.100	.590	.740	.660	115	.770
DEC	2.300	.690	.980	.960	.910	1.190

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
METALS						
SILVER (UG/L)				DET'N LIMIT = .020	GUIDELINE = 50. (A1)	
JAN	.040 <T	.060 <T	.080 <T	BDL	BDL	BDL
FEB	BDL	BDL	.100 <T	BDL	BDL	BDL
MAR	BDL	BDL	.070 <T	BDL	BDL	BDL
APR	BDL	BDL	.350 <T	.280 <T	.160 <T	.030 <T
MAY	BDL	BDL	.210 <T	BDL	BDL	BDL
JUN	BDL	BDL	.060 <T	BDL	.040 <T	.040 <T
JUL	BDL	BDL	.080 <T	BDL	BDL	BDL
AUG	BDL	BDL	.260 <T	.070 <T	BDL	.030 <T
SEP	.070 <T	.050 <T	.310 <T	BDL	BDL	BDL
OCT	BDL	BDL	BDL	BDL	BDL	BDL
NOV	BDL	BDL	BDL	BDL	BDL	BDL
DEC	BDL	BDL	.090 <T	BDL	BDL	.030 <T
ALUMINUM (UG/L)				DET'N LIMIT = .050	GUIDELINE = 100.(A4)	
JAN	17.400	232.000	336.400	208.800	197.200	208.800
FEB	49.880	290.000	220.400	278.400	220.400	243.600
MAR	20.880	255.200	162.400	185.600	162.400	208.800
APR	88.160	348.000	232.000	278.400	220.400	266.800
MAY	69.600	185.600	139.200	162.400	139.200	174.000
JUN	320.000	220.000	190.000	190.000	180.000	200.000
JUL	120.000	160.000	140.000	140.000	140.000	150.000
AUG	180.000	250.000	180.000	170.000	190.000	200.000
SEP	250.000	41.000	140.000	160.000	190.000	190.000
OCT	40.000	210.000	160.000	180.000	230.000	200.000
NOV	50.000	210.000	170.000	210.000	190.000	260.000
DEC	33.000	270.000	200.000	210.000	190.000	240.000
ARSENIC (UG/L)				DET'N LIMIT = 0.050	GUIDELINE = 50.0 (A1)	
JAN	.400 <T	.460 <T	.590 <T	.320 <T	.280 <T	.240 <T
FEB	.210 <T	.340 <T	.220 <T	.310 <T	.360 <T	.250 <T
MAR	.830 <T	.880 <T	.730 <T	.900 <T	.650 <T	.790 <T
APR	.590 <T	.450 <T	.730 <T	.670 <T	.820 <T	.540 <T
MAY	.950 <T	.780 <T	.600 <T	.720 <T	.700 <T	.770 <T
JUN	1.400	.520 <T	.590 <T	.750 <T	.680 <T	.390 <T
JUL	1.700	.780 <T	.820 <T	.770 <T	.920 <T	.820 <T
AUG	1.900	1.200	1.300	1.500	1.400	1.400
SEP	1.300	1.700	.960 <T	1.000 <T	1.100	1.100
OCT	.690 <T	.580 <T	.630 <T	.550 <T	.680 <T	.610 <T
NOV	.460 <T	.320 <T	.350 <T	.460 <T	.100 <T	.270 <T
DEC	.590 <T	.300 <T	.380 <T	.460 <T	.390 <T	.370 <T
BARIUM (UG/L)				DET'N LIMIT = 0.020	GUIDELINE = 1000. (A1)	
JAN	38.000	35.000	41.000	36.000	38.000	37.000
FEB	36.000	34.000	34.000	33.000	37.000	34.000
MAR	39.000	37.000	40.000	35.000	36.000	35.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
APR	33.000	32.000	35.000	33.000	36.000	31.000
MAY	40.000	35.000	39.000	35.000	37.000	35.000
JUN	37.000	34.000	36.000	35.000	34.000	35.000
JUL	38.000	35.000	37.000	36.000	38.000	35.000
AUG	39.000	37.000	38.000	37.000	36.000	38.000
SEP	37.000	40.000	41.000	42.000	44.000	44.000
OCT	41.000	39.000	40.000	39.000	39.000	38.000
NOV	41.000	34.000	37.000	34.000	39.000	36.000
DEC	38.000	35.000	38.000	35.000	36.000	36.000
BORON (UG/L)				DET'N LIMIT = 0.200 GUIDELINE = 5000. (A1)		
JAN	29.000	28.000	53.000	35.000	36.000	22.000
FEB	59.000	60.000	26.000	14.000 <T	58.000	56.000
MAR	47.000	63.000	81.000	76.000	80.000	61.000
APR	190.000	180.000	39.000	47.000	180.000	180.000
MAY	110.000	120.000	54.000	36.000	69.000	100.000
JUN	24.000	23.000	21.000	22.000	23.000	24.000
JUL	34.000	32.000	35.000	34.000	31.000	30.000
AUG	59.000	45.000	53.000	56.000	58.000	54.000
SEP	41.000	41.000	45.000	39.000	47.000	40.000
OCT	24.000	25.000	26.000	26.000	27.000	26.000
NOV	14.000 <T	13.000 <T	16.000 <T	13.000 <T	14.000 <T	15.000 <T
DEC	22.000	21.000	21.000	19.000 <T	12.000 <T	20.000 <T
BERYLLIUM (UG/L)				DET'N LIMIT = 0.010 GUIDELINE = N/A		
JAN	.030 <T	.020 <T	.060 <T	.070 <T	.050 <T	.030 <T
FEB	BDL	BDL	.040 <T	BDL	.020 <T	.060 <T
MAR	.030 <T	.060 <T	.210 <T	.290 <T	.150 <T	.200 <T
APR	.270 <T	.210 <T	1.200	.830	.680	.180 <T
MAY	.260 <T	.170 <T	.080 <T	.080 <T	.130 <T	.210 <T
JUN	.100 <T	.070 <T	.090 <T	.080 <T	.080 <T	.090 <T
JUL	.180 <T	.120 <T	.110 <T	.130 <T	.060 <T	.120 <T
AUG	.190 <T	.130 <T	.030 <T	.100 <T	.140 <T	.140 <T
SEP	.120 <T	.100 <T	.020 <T	.050 <T	.030 <T	.030 <T
OCT	BDL	BDL	BDL	BDL	.030 <T	BDL
NOV	BDL	BDL	BDL	BDL	BDL	BDL
DEC	.040 <T	.020 <T	.020 <T	BDL	.030 <T	.030 <T
CADMIUM (UG/L)				DET'N LIMIT = 0.050 GUIDELINE = 5.000 (A1)		
JAN	.230 <T	BDL	BDL	BDL	BDL	BDL
FEB	.060 <T	BDL	BDL	BDL	BDL	BDL
MAR	.390 <T	.100 <T	BDL	BDL	BDL	BDL
APR	.110 <T	BDL	.510	.480 <T	.400 <T	BDL
MAY	.280 <T	.100 <T	.260 <T	.110 <T	BDL	BDL
JUN	.200 <T	BDL	.080 <T	.070 <T	BDL	BDL
JUL	BDL	BDL	.120 <T	BDL	BDL	BDL
AUG	BDL	BDL	BDL	BDL	BDL	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
SEP	BDL	BDL	BDL	BDL	BDL	BDL
OCT	BDL	BDL	BDL	BDL	BDL	BDL
NOV	BDL	.060 <T	.120 <T	BDL	BDL	BDL
DEC	BDL	BDL	.120 <T	BDL	BDL	BDL
COBALT (UG/L)			DET'N LIMIT = 0.020 GUIDELINE = N/A			
JAN	.080 <T	.070 <T	.140 <T	.130 <T	.120 <T	.080 <T
FEB	.140 <T	.040 <T	.100 <T	.060 <T	.040 <T	.060 <T
MAR	.160 <T	.100 <T	.130 <T	.170 <T	.170 <T	.150 <T
APR	.100 <T	BDL	.350 <T	.080 <T	.100 <T	.090 <T
MAY	.330 <T	.230 <T	.280 <T	.240 <T	.250 <T	.240 <T
JUN	.040 <T	BDL	.060 <T	BDL	BDL	BDL
JUL	.100 <T	.080 <T	2.600	.120 <T	.130 <T	.160 <T
AUG	.160 <T	.120 <T	.160 <T	.120 <T	.320 <T	.090 <T
SEP	BDL	.070 <T	.110 <T	.100 <T	.760 <T	.110 <T
OCT	.060 <T	.030 <T	.230 <T	.050 <T	BDL	BDL
NOV	.130 <T	.050 <T	.370 <T	.140 <T	BDL	BDL
DEC	.040 <T	.030 <T	.160 <T	.030 <T	BDL	BDL
CHROMIUM (UG/L)			DET'N LIMIT = 0.100 GUIDELINE = 50. (A1)			
JAN	4.000	3.700	5.800	7.100	7.300	2.200
FEB	4.900	5.000	1.400	BDL	4.800	4.500
MAR	3.900	5.900	7.600	7.000	7.500	5.300
APR	7.800	7.600	1.300	1.500	7.100	7.100
MAY	6.200	6.700	2.400	1.400	3.200	5.000
JUN	3.900	3.400	2.000	3.400	3.500	3.700
JUL	5.800	5.400	5.300	5.400	5.400	5.200
AUG	6.300	4.100	5.100	5.800	6.000	5.600
SEP	4.300	4.100	4.100	4.200	5.000	4.100
OCT	3.500	3.100	3.400	3.200	3.800	3.500
NOV	1.200	.200 <T	BDL	BDL	BDL	BDL
DEC	3.100	2.400	2.000	2.100	BDL	2.300
COPPER (UG/L)			DET'N LIMIT = .100 GUIDELINE = 1000 (A3)			
JAN	1.300	.760 <T	170.000	14.000	49.000	4.500
FEB	1.700	.930 <T	130.000	12.000	120.000	5.800
MAR	1.800	.920 <T	140.000	17.000	55.000	4.900
APR	2.900	.910 <T	150.000	18.000	56.000	5.600
MAY	2.600	1.200	120.000	17.000	51.000	7.300
JUN	1.900	.960 <T	94.000	19.000	11.000	81.000
JUL	.910 <T	1.200	140.000	17.000	130.000	13.000
AUG	.860 <T	1.500	100.000	21.000	140.000	15.000
SEP	1.800	1.100	88.000	21.000	280.000	13.000
OCT	.700 <T	1.500	140.000	30.000	280.000	19.000
NOV	1.000 <T	.690 <T	150.000	20.000	54.000	8.900
DEC	.710 <T	.760 <T	200.000	15.000	190.000	6.300

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DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
IRON (UG/L)				DET'N LIMIT = 4.000 GUIDELINE = 300. (A3)		
JAN	35.000 <T	9.500 <T	140.000	77.000	32.000 <T	30.000 <T
FEB	62.000	8.100 <T	73.000	130.000	33.000 <T	36.000 <T
MAR	29.000 <T	7.300 <T	53.000	80.000	34.000 <T	31.000 <T
APR	100.000	5.100 <T	100.000	120.000	72.000	35.000 <T
MAY	63.000	BDL	63.000	110.000	45.000 <T	48.000 <T
JUN	140.000	5.600 <T	88.000	90.000	46.000 <T	110.000
JUL	100.000	6.300 <T	45.000 <T	70.000	54.000	63.000
AUG	120.000	BDL	74.000	83.000	41.000 <T	38.000 <T
SEP	5.100 <T	88.000	53.000	67.000	160.000	43.000 <T
OCT	65.000	BDL	61.000	95.000	490.000	40.000 <T
NOV	93.000	6.300 <T	69.000	100.000	49.000 <T	40.000 <T
DEC	47.000 <T	BDL	71.000	78.000	27.000 <T	27.000 <T
MERCURY (UG/L)				DET'N LIMIT = 0.010 GUIDELINE = 1.000 (A1)		
JAN	BDL	BDL	.	.050 <T	.	.070
FEB	BDL	BDL	.	.060	.	.040 <T
MAR	BDL	BDL	.	.090	.	.050 <T
APR	BDL	BDL	.	.110	.	.050 <T
MAY	BDL	BDL	.	.090	.	.040 <T
JUN	BDL	.020 <T	.	.120	.	.060
JUL	.020 <T	.030 <T	.	.160	.	.110
AUG	.020 <T	.030 <T	.	.150	.	.080
SEP	BDL	BDL	.	.170	.	.100
OCT	BDL	.030 <T	.	BDL	.	.080
NOV	BDL	BDL	.	BDL	.	.130
DEC	.020 <T	.020 <T	.	BDL	.	.100
MANGANESE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 50.0 (A3)		
JAN	8.800	4.000	3.600	3.900	3.100	2.700
FEB	9.000	2.200	3.600	4.600	3.500	2.600
MAR	11.000	2.700	2.900	3.500	2.900	2.500
APR	16.000	3.600	5.700	6.000	5.800	3.300
MAY	23.000	1.500	3.300	3.900	3.800	2.700
JUN	56.000	3.500	5.100	4.800	4.300	7.600
JUL	83.000	3.200	4.600	5.800	6.800	5.400
AUG	61.000	3.300	5.300	6.800	4.700	4.400
SEP	4.200	61.000	5.200	5.600	6.100	4.700
OCT	56.000	3.700	5.200	6.700	8.300	4.700
NOV	29.000	2.200	4.700	5.600	4.500	4.000
DEC	10.000	1.800	3.700	4.600	3.300	2.900
MOLYBDENUM (UG/L)				DET'N LIMIT = 0.020 GUIDELINE = N/A		
JAN	.390 <T	.530	.480 <T	.390 <T	.410 <T	.420 <T
FEB	.340 <T	.430 <T	.350 <T	.350 <T	.440 <T	.410 <T
MAR	.450 <T	.470 <T	.650	.670	.620	.620
APR	.520	.590	.720	.730	.630	.560

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DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
MAY	.560	.470 <T	.550	.530	.550	.520
JUN	.640	.840	.760	.830	.690	.580
JUL	.610	.580	.610	.640	.580	.700
AUG	.470 <T	.640	.510	.560	.560	.630
SEP	.690	.490 <T	.630	.620	.770	.690
OCT	.340 <T	.410 <T	.410 <T	.380 <T	.470 <T	.430 <T
NOV	.300 <T	.410 <T	.400 <T	.400 <T	.420 <T	.390 <T
DEC	.360 <T	.360 <T	.390 <T	.410 <T	.350 <T	.340 <T
NICKEL (UG/L)			DET'N LIMIT = 0.100 GUIDELINE = 50. (F3)			
JAN	.410 <T	.190 <T	1.700 <T	.240 <T	.220 <T	BDL
FEB	BDL	BDL	2.300	BDL	BDL	BDL
MAR	BDL	BDL	2.600	BDL	.250 <T	.160 <T
APR	.250 <T	BDL	8.200	.110 <T	1.000 <T	BDL
MAY	1.500 <T	1.100 <T	2.300	.900 <T	.950 <T	.840 <T
JUN	BDL	BDL	4.500	BDL	BDL	BDL
JUL	BDL	BDL	88.000	BDL	BDL	BDL
AUG	1.500 <T	1.100 <T	2.100	1.100 <T	210.000	1.200 <T
SEP	.120 <T	.460 <T	3.200	.440 <T	720.000	1.300 <T
OCT	BDL	BDL	7.700	BDL	BDL	BDL
NOV	.120 <T	.680 <T	12.000	.820 <T	.770 <T	.450 <T
DEC	BDL	BDL	7.100	BDL	BDL	BDL
LEAD (UG/L)			DET'N LIMIT = 0.050 GUIDELINE = 50. (A1)			
JAN	.410	.060 <T	8.600	.130 <T	.700	.100 <T
FEB	.470	.030 <T	.410	.060 <T	1.100	BDL
MAR	1.200	.220	.880	.290	1.200	.290
APR	1.900	.150 <T	1.100	.780	1.800	.320
MAY	19.000	.240	.960	.200 <T	1.000	.180 <T
JUN	1.300	.150 <T	.790	.160 <T	.380	1.300
JUL	.830	.110 <T	1.100	.250	2.200	.470
AUG	1.200	.430	1.100	.230	1.500	.580
SEP	.460	.960	.910	.390	5.700	.820
OCT	.550	BDL	.650	.190 <T	8.800	.260
NOV	.740	.030 <T	.660	.110 <T	.780	.190 <T
DEC	.300	.090 <T	1.300	.390	2.100	.110 <T
ANTIMONY (UG/L)			DET'N LIMIT = .050 GUIDELINE = 146. (D4)			
JAN	.400	.420	.390	.470	.460	.400
FEB	.420	.440	.490	.440	.410	.500
MAR	.570	.610	.570	.490	.530	.500
APR	.470	.560	.820	.760	.710	.510
MAY	.820	.860	.850	.810	.880	.790
JUN	.650	.860	1.100	.910	.940	.910
JUL	.540	.540	.820	.720	.530	.610
AUG	.550	.590	.640	.710	.620	.750
SEP	.750	.580	.670	.640	.690	.530

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DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
OCT	.400	.530	.510	.520	.520	.550
NOV	.300	.330	.440	.430	.480	.370
DEC	.390	.510	.540	.510	.420	.440
SELENIUM (UG/L)			DET'N LIMIT = 0.200 GUIDELINE = 10. (A1)			
JAN	BDL	BDL	.470 <T	.360 <T	1.000 <T	.570 <T
FEB	BDL	.260 <T	BDL	1.400 <T	.520 <T	1.300 <T
MAR	4.200 <T	4.200 <T	4.200 <T	4.400 <T	3.100 <T	1.300 <T
APR	2.700 <T	1.600 <T	11.000	10.000 <T	7.700 <T	3.000 <T
MAY	2.000 <T	3.600 <T	.660 <T	2.200 <T	2.500 <T	2.400 <T
JUN	.850 <T	.970 <T	2.300 <T	2.100 <T	2.500 <T	1.100 <T
JUL	BDL	BDL	2.200 <T	BDL	BDL	1.600 <T
AUG	1.300 <T	1.600 <T	1.100 <T	BDL	1.200 <T	2.700 <T
SEP	3.400 <T	5.500	2.000 <T	BDL	1.100 <T	BDL
OCT	BDL	BDL	BDL	BDL	BDL	BDL
NOV	BDL	BDL	BDL	BDL	BDL	BDL
DEC	BDL	BDL	BDL	BDL	BDL	BDL
STRONTIUM (UG/L)			DET'N LIMIT = .050 GUIDELINE = N/A			
JAN	130.000	140.000	140.000	130.000	140.000	140.000
FEB	130.000	130.000	130.000	130.000	130.000	120.000
MAR	140.000	140.000	140.000	130.000	130.000	130.000
APR	120.000	120.000	120.000	120.000	120.000	110.000
MAY	130.000	130.000	140.000	130.000	130.000	130.000
JUN	130.000	130.000	130.000	130.000	120.000	120.000
JUL	130.000	120.000	120.000	120.000	140.000	130.000
AUG	130.000	130.000	130.000	140.000	140.000	140.000
SEP	140.000	140.000	150.000	150.000	160.000	160.000
OCT	140.000	150.000	150.000	140.000	150.000	140.000
NOV	140.000	130.000	140.000	130.000	140.000	140.000
DEC	150.000	140.000	150.000	140.000	140.000	140.000
TITANIUM (UG/L)			DET'N LIMIT = .050 GUIDELINE = N/A			
JAN	4.200	3.200	3.600	2.900	2.900	2.800
FEB	5.200	3.000	3.300	3.400	3.000	2.900
MAR	4.500	3.900	5.000	4.600	4.600	4.600
APR	11.000	7.700	7.900	8.000	8.100	7.600
MAY	4.900	4.900	4.800	4.400	4.600	4.300
JUN	8.400	5.800	5.600	6.000	6.000	5.900
JUL	8.200	6.300	6.700	6.400	6.900	6.500
AUG	6.200	4.600	4.200	4.400	4.300	4.400
SEP	7.300	8.100	5.400	6.100	6.000	6.000
OCT	3.300	2.600	3.200	4.000	2.900	2.700
NOV	5.100	3.600	4.900	4.900	3.400	3.100
DEC	5.600	4.600	5.700	4.900	4.700	4.600
THALLIUM (UG/L)			DET'N LIMIT = .010 GUIDELINE = 13. (D4)			

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DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	BDL	BDL	BDL	BDL	BDL	BDL
FEB	BDL	BDL	BDL	BDL	.050 <T	BDL
MAR	BDL	.040 <T	BDL	BDL	BDL	BDL
APR	.090 <T	.070 <T	.610	.560	.440	BDL
MAY	BDL	BDL	BDL	BDL	BDL	BDL
JUN	.080 <T	.040 <T	.040 <T	.050 <T	.050 <T	.020 <T
JUL	BDL	BDL	BDL	BDL	BDL	BDL
AUG	BDL	.030 <T	.030 <T	.020 <T	.020 <T	BDL
SEP	.080 <T	.060 <T	.050 <T	BDL	.020 <T	BDL
OCT	BDL	BDL	BDL	BDL	BDL	BDL
NOV	BDL	BDL	BDL	BDL	BDL	BDL
DEC	BDL	BDL	.020 <T	BDL	BDL	BDL
URANIUM (UG/L)			DET'N LIMIT = .020 GUIDELINE = 100.(B1)			
JAN	.240	.160 <T	.140 <T	.150 <T	.160 <T	.170 <T
FEB	.200 <T	.120 <T	.090 <T	.120 <T	.180 <T	.130 <T
MAR	.440	.340	.190 <T	.200 <T	.160 <T	.230
APR	.400	.250	.580	.600	.530	.170 <T
MAY	.400	.120 <T	.090 <T	.130 <T	.090 <T	.080 <T
JUN	.350	.080 <T	.180 <T	.040 <T	.170 <T	.110 <T
JUL	.330	.080 <T	BDL	.060 <T	.150 <T	.090 <T
AUG	.350	.090 <T	.080 <T	.170 <T	.150 <T	.070 <T
SEP	.060 <T	.300	.060 <T	.070 <T	.070 <T	.200 <T
OCT	.220	.070 <T	.060 <T	.050 <T	.080 <T	.070 <T
NOV	.220	.070 <T	.050 <T	.060 <T	.040 <T	.050 <T
DEC	.300	.140 <T	.140 <T	.120 <T	.120 <T	.120 <T
VANADIUM (UG/L)			DET'N LIMIT = .050 GUIDELINE = N/A			
JAN	.310 <T	.600	1.300	.760	.840	.550
FEB	.250 <T	.530	.570	.650	.750	.420 <T
MAR	.180 <T	.780	.910	.820	.900	.620
APR	.510	.940	1.100	1.000	1.500	.670
MAY	.470 <T	.520	.650	.530	.700	.520
JUN	.760	.570	.520	.510	.560	.720
JUL	.680	.580	.530	.550	.570	.520
AUG	.950	.670	.590	.550	.550	.600
SEP	.640	.760	.480 <T	.420 <T	.650	.510
OCT	.480 <T	.360 <T	.330 <T	.340 <T	.630	.310 <T
NOV	.440 <T	.270 <T	.300 <T	.230 <T	.290 <T	.240 <T
DEC	.390 <T	.380 <T	.420 <T	.340 <T	.380 <T	.330 <T
ZINC (UG/L)			DET'N LIMIT = .001 GUIDELINE = 5000. (A3)			
JAN	3.700	1.800	13.000	2.000	11.000	1.900
FEB	4.200	2.200	31.000	2.300	11.000	5.300
MAR	5.700	2.800	34.000	2.400	7.400	2.800
APR	4.100	2.900	88.000	3.600	14.000	3.100
MAY	9.600	3.300	34.000	2.700	14.000	2.800

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
JUN	5.800	3.000	71.000	2.900	3.300	12.000
JUL	2.700	2.600	130.000	3.500	23.000	3.600
AUG	1.500	1.300	14.000	.940 <T	24.000	2.600
SEP	2.400	2.900	19.000	1.800	100.000	3.100
OCT	.830 <T	1.500	95.000	3.300	60.000	1.800
NOV	2.400	1.800	120.000	2.900	9.100	2.600
DEC	1.000 <T	1.600	190.000	2.300	20.000	1.900

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
	PESTICIDES & PCB					
ALPHA BHC (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 700 (G)	
JAN	BDL	BDL	.	BDL	.	BDL
FEB	2.000 <T	3.000 <T	.	1.000 <T	.	1.000 <T
MAR	2.000 <T	BDL	.	1.000 <T	.	2.000 <T
APR	BDL	IPE	.	BDL	.	IPE
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
LINDANE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 4000 (A1)	
JAN	BDL	BDL	.	1.000 <T	.	BDL
FEB	1.000 <T	2.000 <T	.	BDL	.	BDL
MAR	1.000 <T	BDL	.	BDL	.	1.000 <T
APR	BDL	IPE	.	BDL	.	IPE
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
PHENOLICS (UG/L	PHENOLICS)		DET'N LIMIT = 0.2		GUIDELINE = 2.00 (A3)	
JAN	1.600	1.000	.	.	.	.
FEB	4.600	3.800	.	.	.	.
MAR	2.400	2.200	.	.	.	.
APR	5.000	3.400	.	.	.	.
MAY	3.000	4.800	.	.	.	.
JUN	2.400	2.400	.	.	.	.
JUL	1.600	1.200	.	.	.	.
AUG	1.400	1.200	.	.	.	.
SEP	1.000 <T	.800 <T	.	.	.	.
OCT	3.000	2.200	.	INR	.	INR
NOV	1.600	1.600	.	.	.	.
DEC	3.000	2.000	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
VOLATILES						
BENZENE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 5.0 (B1)		
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	.100 <T	.	BDL	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	.050 <T
JUL	BDL	BDL	.	BDL	.	.050 <T
AUG	.050 <T	BDL	.	BDL	.	BDL
SEP	BDL	BDL	.	.050 <T	.	.050 <T
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
TOLUENE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 24.0 (B4)		
JAN	.050 <T	.100 <T	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	.050 <T	.	BDL	.	BDL
MAY	BDL	.200 <T	.	.100 <T	.	BDL
JUN	BDL	BDL	.	BDL	.	.100 <T
JUL	BDL	.100 <T	.	.150 <T	.	.150 <T
AUG	BDL	.150 <T	.	BDL	.	BDL
SEP	.050 <T	.100 <T	.	.050 <T	.	.050 <T
OCT	BDL	.100 <T	.	.050 <T	.	.100 <T
NOV	BDL	BDL	.	.150 <T	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
ETHYLBENZENE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 2.4 (B4)		
JAN	BDL	.050 <T	.	BDL	.	BDL
FEB	.050 <T	.050 <T	.	BDL	.	.050 <T
MAR	BDL	.050 <T	.	BDL	.	BDL
APR	BDL	.100 <T	.	.100 <T	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	.050 <T	.	BDL	.	BDL
AUG	BDL	.050 <T	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
M-XYLENE (UG/L)				DET'N LIMIT = .100 GUIDELINE = 300 (B4)		
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
APR	BDL	BDL	.	.200 <T	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	.100 <T	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
O-XYLENE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 300 (B4)		
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	.050 <T	.	BDL
APR	.050 <T	BDL	.	.100 <T	.	BDL
MAY	BDL	.050 <T	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	.050 <T
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	.050 <T	.	BDL	.	BDL
SEP	BDL	.050 <T	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
STYRENE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 46.5 (D2)		
JAN	.200 <T	.100 <T	.	BDL	.	.200 <T
FEB	.200 <T	.100 <T	.	.100 <T	.	.100 <T
MAR	.250 <T	BDL	.	.300 <T	.	BDL
APR	.250 <T	.050 <T	.	.400 <T	.	.050 <T
MAY	BDL	.050 <T	.	.100 <T	.	BDL
JUN	BDL	BDL	.	.250 <T	.	.150 <T
JUL	BDL	.350 <T	.	.100 <T	.	.150 <T
AUG	.050 <T	BDL	.	.100 <T	.	.200 <T
SEP	BDL	BDL	.	.150 <T	.	.100 <T
OCT	BDL	BDL	.	BDL	.	.050 <T
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	.050 <T	.	BDL	.	.050 <T
CHLOROFORM (UG/L)				DET'N LIMIT = .100 GUIDELINE = 350 (A1+)		
JAN	.200 <T	86.000	.	72.600	.	71.200
FEB	.200 <T	90.400	.	77.400	.	101.800
MAR	.900 <T	90.000	.	88.300	.	98.000
APR	1.900	110.000	.	78.600	.	85.600
MAY	.600 <T	150.000	.	100.000	.	135.000
JUN	.500 <T	147.000	.	134.000	.	145.000
JUL	1.100	160.000	.	129.500	.	125.000
AUG	.700 <T	154.000	.	154.000	.	131.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
SEP	.200 <T	148.000	.	132.000	.	137.000
OCT	.400 <T	117.700	.	97.100	.	95.800
NOV	BDL	91.200	.	73.100	.	89.100
DEC	.200 <T	103.000	.	75.500	.	96.500
111, TRICHLOROETHANE (UG/L)				DET'N LIMIT = .020 GUIDELINE = 200 (D1)		
JAN	.040 <T	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	.080 <T	.060 <T	.	.060 <T	.	.060 <T
APR	.020 <T	BDL	.	BDL	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	BDL
SEP	.060 <T	BDL	.	BDL	.	BDL
OCT	.040 <T	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
DICHLOROBROMOMETHANE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 350 (A1+)		
JAN	BDL	8.300	.	6.900	.	6.700
FEB	BDL	7.400	.	6.750	.	8.000
MAR	BDL	7.050	.	6.600	.	7.200
APR	.350 <T	6.550	.	5.150	.	5.200
MAY	BDL	6.500	.	6.300	.	6.600
JUN	BDL	6.800	.	6.450	.	6.600 APS
JUL	BDL	7.500	.	6.400	.	7.100
AUG	BDL	9.750	.	8.800	.	7.600
SEP	BDL	10.550	.	9.600	.	10.450
OCT	BDL	9.750	.	9.050 SPS	.	8.600
NOV	BDL	8.300	.	7.400	.	7.600 APS
DEC	BDL	7.000	.	5.300	.	6.400
CHLORODIBROMOMETHANE (UG/L)				DET'N LIMIT = .100 GUIDELINE = 350 (A1+)		
JAN	BDL	.400 <T	.	.300 <T	.	.300 <T
FEB	BDL	.300 <T	.	.300 <T	.	.300 <T
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	.500 <T	.	.500 <T	.	BDL
MAY	BDL	.300 <T	.	BDL	.	.200 <T
JUN	BDL	.300 <T	.	.300 <T	.	BDL
JUL	BDL	.300 <T	.	.300 <T	.	.300 <T
AUG	BDL	.500 <T	.	.500 <T	.	.400 <T
SEP	BDL	.500 <T	.	.600 <T	.	.800 <T
OCT	BDL	.500 <T	.	.700 <T	.	.500 <T
NOV	BDL	.400 <T	.	.400 <T	.	.800 <T
DEC	BDL	.300 <T	.	.200 <T	.	.300 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM BELLEVILLE WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
T-CHLOROETHYLENE (UG/L)				DET'N LIMIT = .050	GUIDELINE = 10.0 (C2)	
JAN	BDL	.050 <T	.	BDL	.	BDL
FEB	BDL	.050 <T	.	.050 <T	.	.100 <T
MAR	BDL	BDL	.	BDL	.	BDL
APR	.050 <T	.100 <T	.	.100 <T	.	.100 <T
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	.050 <T	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
TOTL TRIHALOMETHANES (UG/L)				DET'N LIMIT = .500	GUIDELINE = 350 (A1)	
JAN	BDL	94.700	.	79.800	.	78.200
FEB	BDL	98.100	.	84.450	.	110.100
MAR	.900 <T	97.050	.	94.900	.	105.200
APR	2.250 <T	117.050	.	84.250	.	90.800
MAY	.600 <T	156.800	.	106.300	.	141.800
JUN	.500 <T	154.100	.	140.750	.	151.600
JUL	1.100 <T	167.800	.	136.200	.	132.400
AUG	.700 <T	164.250	.	163.300	.	139.000
SEP	BDL	159.050	.	142.200	.	148.250
OCT	BDL	127.950	.	106.850	.	104.900
NOV	BDL	99.900	.	80.900	.	97.500
DEC	BDL	110.300	.	81.000	.	103.200

TRACE LEVELS OF TOLUENE ARE LABORATORY ARTIFACTS DERIVED FROM THE ANALYTICAL METHODOLOGY.

TRACE LEVELS OF STYRENE ARE CONSIDERED TO BE LABORATORY ARTIFACTS RESULTING FROM THE LABORATORY SHIPPING CONTAINERS.

Table 6

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
BACTERIOLOGICAL			
FECAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	0 (A1)
STANDARD PLATE COUNT MEMBRANE FILTRATION	CT/ML	0	500/ML(A1)
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100mL(A1)
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A
CHLOROAROMATICS			
HEXACHLOROBUTADIENE	NG/L	1.000	450. (D4)
1,2,3-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,3,4-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,3,5-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,4-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,4,5-TETRACHLOROBENZENE	NG/L	1.000	38000 (D4)
1,3,5-TRICHLOROBENZENE	NG/L	5.000	10000 (D4)
HEXACHLOROBENZENE	NG/L	1.0	10. (C1)
HEXACHLOROETHANE	NG/L	1.000	1900. (D4)
OCTACHLOROSTYRENE	NG/L	1.000	N/A
PENTACHLOROBENZENE	NG/L	1.000	74000 (D4)
2,3,6-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,4,5-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,6,A-TRICHLOROTOLUENE	NG/L	5.000	N/A
CHLOROPHENOLS			
2,3,4-TRICHLOROPHENOL	NG/L	50.	N/A
2,3,4,5-TETRACHLOROPHENOL	NG/L	50.	N/A
2,3,5,6-TETRACHLOROPHENOL	NG/L	50.	N/A
2,4,5-TRICHLOROPHENOL	NG/L	50.	2600000 (D4)
2,4,6-TRICHLOROPHENOL	NG/L	50.	2000. (B4)
PENTACHLOROPHENOL	NG/L	50.	30000. (B4)
CHEMISTRY (FLD)			
FIELD COMBINED CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD FREE CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD TOTAL CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD PH	DMSNLESS	N/A	6.5-8.5(A4)
FIELD TEMPERATURE	°C	N/A	<15 °C(A1)
FIELD TURBIDITY	FTU	N/A	1.0 (A1)
CHEMISTRY (LAB)			
ALKALINITY	MG/L	.200	30-500(A4)
CALCIUM	MG/L	.100	100. (F2)
CYANIDE	MG/L	.001	.20(A1)
CHLORIDE	MG/L	.200	250. (A3)
COLOUR	TCU	.5	5.0 (A3)
CONDUCTIVITY	UMHO/CM	1.	400. (F2)
FLUORIDE	MG/L	.01	2.4 (A1)
HARDNESS	MG/L	.50	80-100(A4)
MAGNESIUM	MG/L	.05	30. (F2)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
NITRITE	MG/L	.001	1.0 (A1)
TOTAL NITRATES	MG/L	.02	10. (A1)
NITROGEN TOTAL KJELDAHL	MG/L	.02	N/A
PH	DMSNLESS	N/A	6.5-8.5(A4)
PHOSPHORUS FIL REACT	MG/L	.0005	N/A
PHOSPHORUS TOTAL	MG/L	.002	.40(F2)
TOTAL SOLIDS	MG/L	1.	500. (A3)
TURBIDITY	FTU	.02	1.0 (A1)
METALS			
ALUMINUM	UG/L	.050	100. (A4)
ANTIMONY	UG/L	.050	10. (F3)
ARSENIC	UG/L	.050	50. (A1)
BARIUM	UG/L	.020	1000. (A1)
BORON	UG/L	.200	5000. (A1)
BERYLLIUM	UG/L	.010	0.20 (H)
CADMIUM	UG/L	.050	5.0 (A1)
COBALT	UG/L	.020	1000. (H)
CHROMIUM	UG/L	.100	50. (A1)
COPPER	UG/L	.100	1000. (A3)
IRON	UG/L	5.0	300. (A3)
MERCURY	UG/L	.01	1.0 (A1)
MANGANESE	UG/L	.050	50. (A3)
MOLYBDENUM	UG/L	.020	500. (H)
NICKEL	UG/L	.100	50. (F3)
LEAD	UG/L	.020	50. (A1)
SELENIUM	UG/L	.200	10. (A1)
SILVER	UG/L	.020	50. (A1)
STRONTIUM	UG/L	.100	2000. (H)
THALLIUM	UG/L	.010	13. (D4)
TITANIUM	UG/L	.100	N/A
URANIUM	UG/L	.020	20. (A2)
VANADIUM	UG/L	.020	100. (H)
ZINC	UG/L	.020	5000. (A3)
PHENOLICS			
PHENOLICS (UNFILTERED REACTIVE)	UG/L	.2	2.0 (A3)
PESTICIDES & PCB			
ALDRIN	NG/L	1.0	700. (A1)
AMETRINE	NG/L	50.	300000. (D3)
ATRAZINE	NG/L	50.	60000. (B3)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700. (G)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300. (G)
GAMMA HEXACHLOROCYCLOHEXANE(LINDANE)	NG/L	1.0	4000. (A1)
ALPHA CHLORDANE	NG/L	2.0	7000. (A1)
GAMMA CHLORDANE	NG/L	2.0	7000. (A1)
BLADEX	NG/L	100.	10000. (B3)
DIELDRIN	NG/L	2.0	700. (A1)
METHOXYCHLOR	NG/L	5.0	900000. (B1)
ENDOSULFAN 1 (THIODAN I)	NG/L	2.0	74000. (D4)
ENDOSULFAN 2 (THIODAN II)	NG/L	4.0	74000. (D4)
ENDRIN	NG/L	4.0	200. (A1)
ENDOSULFAN SULPHATE(THIODAN SULPHATE)	NG/L	4.0	N/A
HEPTACHLOR EPOXIDE	NG/L	1.0	3000. (A1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
HEPTACHLOR	NG/L	1.0	3000.	(A1)
METOLACHLOR	NG/L	500.	50000.	(B3)
MIREX	NG/L	5.0	N/A	
OXYCHLORDANE	NG/L	2.0	N/A	
O,P-DDT	NG/L	5.0	30000.	(A1)
PCB	NG/L	20.0	3000.	(A2)
O,P-DDD	NG/L	5.0	N/A	
PPDDE	NG/L	1.0	30000.	(A1)
PPDDT	NG/L	5.0	30000.	(A1)
ATRATONE	NG/L	50.	N/A	
ALACHLOR	NG/L	500.	35000.	(D2)
PROMETONE	NG/L	50.	52500.	(D3)
PROPAZINE	NG/L	50.	16000.	(D2)
PROMETRYNE	NG/L	50.	1000.	(B3)
SENCOR (METRIBUZIN)	NG/L	100.	80000.	(B2)
SIMAZINE	NG/L	50.	10000.	(B3)
POLYAROMATIC HYDROCARBONS				
PHENANTHRENE	NG/L	10.0	N/A	
ANTHRACENE	NG/L	1.0	N/A	
FLUORANTHENE	NG/L	20.0	42000.	(D4)
PYRENE	NG/L	20.0	N/A	
BENZO(A)ANTHRACENE	NG/L	20.0	N/A	
CHRYSENE	NG/L	50.0	N/A	
DIMETHYL BENZO(A)ANTHRACENE	NG/L	5.0	N/A	
BENZO(E)PYRENE	NG/L	50.0	N/A	
BENZO(B)FLUORANTHENE	NG/L	10.0	N/A	
PERYLENE	NG/L	10.0	N/A	
BENZO(K)FLUORANTHENE	NG/L	1.0	N/A	
BENZO(A)PYRENE	NG/L	5.0	10.	(B1)
BENZO(G,H,I)PERYLENE	NG/L	20.0	N/A	
DIBENZO(A,H)ANTHRACENE	NG/L	10.0	N/A	
INDENO(1,2,3-C,D)PYRENE	NG/L	20.0	N/A	
BENZO(B)CHRYSENE	NG/L	2.0	N/A	
CORONENE	NG/L	10.0	N/A	
SPECIFIC PESTICIDES				
TOXAPHENE	NG/L	N/A	5000.	(A1)
2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T)	NG/L	50.	200000.	(B4)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	NG/L	100.	100000.	(A1)
2,4-DICHLORORPHENOXYBUTYRIC ACID	NG/L	200.	18000.	(B3)
2,4-D PROPIONIC ACID	NG/L	100.	N/A	
DICAMBA	NG/L	100.	120000.	(B1)
PICLORAM	NG/L	100.	190000.	(B3)
SILVEX (2,4,5-TP)	NG/L	50.	10000.	(A1)
DIAZINON	NG/L	20.	20000.	(B1)
DICHLOROVOS	NG/L	20.	N/A	
DURSBAN	NG/L	20.	N/A	
ETHION	NG/L	20.	35000.	(G)
GUTHION(AZINPHOSMETHYL)	NG/L	N/A	20000.	(B1)
MALATHION	NG/L	20.	190000.	(B1)
MEVINPHOS	NG/L	20.	N/A	
METHYL PARATHION	NG/L	50.	7000.	(A1)
METHYLTRITHION	NG/L	20.	N/A	
PARATHION	NG/L	20.	50000.	(B1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
PHORATE (THIMET)	NG/L	20.	2000. (B3)
RELDAN	NG/L	20.	N/A
RONNEL	NG/L	20.	N/A
AMINOCARB	NG/L	N/A	N/A
BENONYL	NG/L	N/A	N/A
BUX (METALKAMATE)	NG/L	2000.	N/A
CARBOFURAN	NG/L	2000.	90000. (B1)
CICP (CHLORPROPHAM)	NG/L	2000.	350000. (G)
DIALLATE	NG/L	2000.	30000. (H)
EPTAM	NG/L	2000.	N/A
IPC	NG/L	2000.	N/A
PROPOXUR (BAYGON)	NG/L	2000.	90000. (G)
SEVIN (CARBARYL)	NG/L	200.	90000. (B1)
SUTAN (BUTYLATE)	NG/L	2000.	245000. (D3)
VOLATILES			
BENZENE	UG/L	.050	5.0 (B1)
TOLUENE	UG/L	.050	24.0 (B4)
ETHYLBENZENE	UG/L	.050	2.4 (B4)
PARA-XYLENE	UG/L	.100	300. (B4)
META-XYLENE	UG/L	.100	300. (B4)
ORTHO-XYLENE	UG/L	.050	300. (B4)
1,1-DICHLOROETHYLENE	UG/L	.100	7.0 (D1)
ETHLYENE DIBROMIDE	UG/L	.05	.05 G)
METHYLENE CHLORIDE	UG/L	.500	50. (B1)
TRANS-1,2-DICHLOROETHYLENE	UG/L	.100	70. (D5)
1,1-DICHLOROETHANE	UG/L	.100	N/A
CHLOROFORM	UG/L	.100	350. (A1+)
1,1,1-TRICHLOROETHANE	UG/L	.020	200. (D1)
1,2-DICHLOROETHANE	UG/L	.050	5.0 (D1)
CARBON TETRACHLORIDE	UG/L	.200	5.0 (B1)
1,2-DICHLOROPROPANE	UG/L	.050	6.0 (D5)
TRICHLOROETHYLENE	UG/L	.100	50. (B1)
DICHLOROBROMOMETHANE	UG/L	.050	350. (A1+)
1,1,2-TRICHLOROETHANE	UG/L	.050	.60(D4)
CHLORODIBROMOMETHANE	UG/L	.100	350. (A1+)
TETRACHLOROETHYLENE	UG/L	.050	10.0 (C2)
BROMOFORM	UG/L	.200	350. (A1+)
1,1,2,2-TETRACHLOROETHANE	UG/L	.050	0.17(D4)
CHLOROBENZENE	UG/L	.100	60. (D5)
1,4-DICHLOROBENZENE	UG/L	.100	1.0 (B4)
1,3-DICHLOROBENZENE	UG/L	.100	130. (G)
1,2-DICHLOROBENZENE	UG/L	.050	3.0 (B4)
TRIFLUOROCHLOROTOLUENE	UG/L	.100	N/A
TOTAL TRIHALOMETHANES	UG/L	.500	350. (A1)
STYRENE	UG/L	.05	140. (D5)